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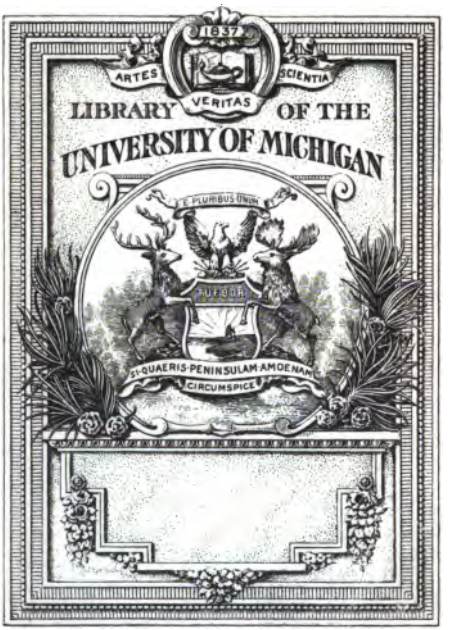
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THE CARE OF THE CHILD IN HEALTH

The MMC Co.

THE CARE OF THE CHILD IN HEALTH

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BY

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To my Sister

C. L. G.

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THE CARE OF THE CHILD IN HEALTH

CHAPTER I

INTRODUCTORY

It is not hard to imagine the glow of enthusiasm with which a young man begins his college life, enters a profession, or starts a business. All the traditions of his vocation, all the prospects of success, and the expectations of a useful development of his faculties combine to make a state of mind that becomes capable of surmounting obstacles, providing a rational outlet for natural energy, of giving a guiding point by which his various impulses are directed. His intellectual status and the usefulness of his future work may be measured not so much by their separate effects and acts as by the informing spirit which controls them. Such things have an inevitable sequence of action, on account of which the superior man,

the person of high mind and character, selects an admirable field of work, or such a field as is susceptible of being dignified by the exercise of thorough work and preparation, of thoughtful attention to details, of a large grasp of the inherent potentialities of the vocation, which marks it off from the sordid and petty affairs of ordinary, petty life. Great results are not obtained by a preternatural flash of wondrous inspiration. On the contrary, they rest upon unremitting toil, upon tireless industry, upon an endless struggle with adverse conditions, the conquering of which means a great step toward the final evolution of civilization.

This is the basis of genius, and a careful examination of the works of any great man will show how scrupulously he has met the demands of the situation. Leonardo da Vinci was willing to grind his own colors, and make his own paints in order to obtain the desired effects; and in the wide range of activities in which he was proficient there was no detail too small or too burdensome to be carefully mastered. William Morris, who was great in both poetry and art, in order to produce works of beauty became a printer, a dyer, a weaver. There was no labor too commonplace, no outlay of time

too great, no course of study and investigation too exhaustive, for his industry. Such men have achieved the great things of the world, and no one who is unwilling to recognize the truth of their methods is able to lead a really profitable life. Such a life cannot be passed in an atmosphere of carelessness, of disregard of duty, of a perpetual avoidance of burdens. Whatever truth there is in this view has a universal, not a particular, application; and men in every walk of life must recognize it in their work, or lacking this recognition must fail. Every citizen of the world has his share of work to do and problems to solve; and the true judge of whether the doing and the solving are successful is not entirely the opinion of existing authority, but rather the ideal, based upon the most objective conception of the worker's intention, as well as his performance.

A vigorous sense of responsibility is, after all has been said, at the root of a really profitable career. Expediency must have no part in it, and makeshift devices must necessarily end in some form of worthlessness. The inner spirit of a piece of work is as worthy of scrupulous attention as the outer form. The one stands for everlasting principle, while the other repre-

sents the adaptation of that principle to the exigencies of practical circumstances. And the perfect blending of these two factors rounds out a life-work as well as a character. It must be said that an appreciation of this truth is oftener found among men than among women. Such a statement is hard to make; it really hurts in the saying, especially if one has a normal respect for the many excellences of the womanly character. But an impartial observation of life necessarily leads one to this conclusion; and what one sees must be said.

There could not be a better demonstration of the unprejudiced truth of this idea than may be had from recognizing the methods which women employ in caring for their children. Such methods constitute a fair standard of comparison because they are the principal occupation of a majority of the really useful women in the world. Those women who are regarded as fortunate have as their vocation and life-work the bearing and the rearing of offspring. They grow up from girlhood with the hope and the belief that such work will be their future calling. Every other employment is frankly regarded as subsidiary, as a temporary means of gain or occupation, which is to be gladly and

unhesitatingly relinquished when the great opportunity presents itself. This great opportunity usually seems so natural and inevitable that its demands are supposed to work themselves out in quite an irresponsible fashion, fully as irresponsible as the choice of a spouse commonly is. On the other hand, the necessities of competition demand a certain amount of preparation for obtaining even a low grade of commercial work, and, for a similar reason, a fair amount of effort is demanded to hold the position. Naturally enough, women recognize this fact, even if they have not thought about the matter very much; but they go no farther than the barest demands of competition, because they recognize, and the world at large recognizes, that the ordinary commercial employments are for them scarcely more than a temporary means of gain or occupation. At the same time, the corollary of the proposition is that household and maternal duties are their permanent work, for which they are peculiarly designed and adapted, and in which they are expected, in the scheme of nature, to find their greatest gratification as well as usefulness.

A recent writer in a popular American magazine, in expressing the discontent of the women

of to-day, cries out: "Give us labor! For countless ages, for thouands, millions it may be, we have labored. When man first wandered, the naked, newly erected savage, and hunted and fought, we wandered with him; each step of his was ours. Within our bodies we bore the race, on our shoulders we carried it; we sought the roots and the plants for its food; and when man's barbed arrow or hook brought the game, our hands dressed it. Side by side, the savage man and the savage woman, we wandered free together and labored free together. And we were contented." She then goes on to explain that as uncivilized conditions changed to civilized, the woman had less and less work to do, until to-day the race is in danger of degeneracy on account of her weakness, her lack of occupation, her unsatisfied condition of mind, and her increasing parasitism.

This cry for work is, in a certain way, astonishing, for the common belief has been that one of the main tendencies of the modern woman was away from the field of hard, manual labor, away from the personal performance of household duties which naturally constitute the quoted writer's "work." And this belief is very commonly held among various classes in

society at large. It is often stated to be at the root of the increasing difficulty in supporting a household. At all events, we see that marriages are being contracted at a later age than formerly and with more difficulty; that households are conducted on a more extravagant plan than was ever customary; that less work is done by mistresses, and that the spread of luxury is ever increasing. It is claimed that children are no longer willing, in planning the externals of their prospective careers, to begin where their parents began, and to go through the same laborious course of financial evolution. On the contrary, they want to begin where their parents left off, evidently believing that a change in external circumstances and the details of social environment in the direction of simplicity was not to be endured, and meant a fall in public estimation.

An additional fact of interest is the change that has gradually been taking place in commercial life. There is a growing competition, there is an increasing development of business methods which requires more energy, more capital, more industry for the successful prosecution of a business enterprise than ever before. The successful business is falling more and

more into the hands of groups of wealthy capitalists, or into those of one unusually active man who often represents a group or syndicate. As a result, many persons who formerly conducted individual enterprises must now be content to accept salaried positions whose pay is not great, either actually or prospectively. The most characteristic thing which one can say is that the plan of specialization is extending into every business and into the individual departments thereof; and that while there are a few places which are highly remunerative, the general salary does not tend to increase, the individual wage cannot be expected to grow larger. Thus, as the result of the centralization of responsibility as well as capital, a larger and larger proportion of the possible situations are subordinate. Such positions must from their nature require less of the qualities of the proprietor and more of the qualities of the employee. They must be administered by persons who have comparatively little personal connection with the intimate policy and welfare of the enterprise, who may be as useful to one firm as another, and who are ready to change from one to another according to the demands of a passing necessity or the whims of personal preference.

This has made the opportunity for thousands of women to participate in business life. They feel the constant impulse to increasing luxury, their needs are not so easily satisfied as formerly by the wage-earning head of the family, and during the interregnum between the period of their entire dependence and the equally distinct period when by marriage they believe that entire independence must come, they endeavor to piece out their possibilities of enjoying life, of gratifying their desire for petty luxury, and, possibly, for the present large necessities of life, by obtaining subordinate positions. They are able to accept less pay than the wage-earning head of the family, because their needs are less. And at the same time, on account of the divisions and subdivisions of specialized business, they are able to do the work almost as well, or fully as well as he does. Many of these positions — being subordinate, having comparatively little responsibility, being merely functional — demand no more than a special, narrow preparation, for which the ordinary woman, whose needs are immediate and whose prospects are liable at any time to undergo a radical change, is almost as well fitted as her brother. He, on the other hand, knows that he must continue

for the rest of his life to be a wage-earner; and his prospects, in all likelihood, will never change unless he, by his own power and resourcefulness, is able to bring the change about.

When the woman comes to marry, as she naturally and inevitably hopes to do, she finds that her husband's income does not permit the same indulgences to which she has become accustomed. They are certainly not possible without the exercise of rigid economy, personal willingness to do many pieces of work in the household, intimate knowledge of all the details of household management, and a full experience of all the homely details that make for the family's prosperity or lack of prosperity. It is really rare that the woman tries in a systematic way to familiarize herself with and to perfect herself in all these details. Her cooking is done as it was learned, by haphazard, by rule of thumb, by the patchwork knowledge which comes from indiscriminate attempts and unregulated experience. She has no acquaintance with the physiology of nutrition, and is utterly unable to regulate her meals so that the maximum of strength is distributed at a minimum cost. She knows very little about fabrics, about dressmaking; but she needs costly clothes

or imitations of such clothes. She knows nothing about the care of her children, about the rules which will increase their measure of health, strength, and useful training; but she feels the necessity and the fitness of handing the care of these children over to nurses and teachers. She has, in short, lost the sympathy for a plain, modest, hard-working, homely life, without at the same time being capable of providing a more efficient plan of work than her grandmothers possessed.

In the wealthier classes the situation is as bad, or possibly worse. Girls are willing to contract marriage without much thought of their probable responsibilities, and wish even less preparation and training for their certain duties. I believe that there is no exaggeration in the statements about their wishing to begin their active life in circumstances which are equivalent to those obtained by their parents after a long period of effort. Of course there are exceptions, as there always are to any broad generalization. But the statement, as a rule, holds good. Manners of living are undoubtedly more extravagant than ever before, fashions of dress are more extravagant than ever before, the amount of personal work which is supposed

to be done by the wife and mother is smaller than ever before. These customs are to be commonly found among the women of the more fortunately situated classes, and they necessitate larger numbers of servants, lessened attention on the part of the mistress, greater expense and wastefulness in the management of the house. And as the natural energy of these women must find some outlet, it shows itself in distortions from its normal manifestations, which have been called all manner of hard names by one part of the community and all manner of fine names by another. These fads do not call for great praise or great blame, any more than neurasthenia or indigestion should be praised or blamed. They should be regarded as the natural expressions of certain conditions of life; and if these manifestations are unsatisfactory and burdensome, relief may be obtained by changing the conditions which produced them.

The inevitable result of these tendencies is a progressive increase in the burdens of the whole household. Difficulties are piled upon the man, and dissatisfaction becomes the lot of the woman. He suffers from care, worry, and the lack of opportunity to cultivate the finer and gentler parts of his nature. She becomes

more artificial, more worldly, more self-seeking than she formerly was or than she ought to be. Each comes to have a separate world, which has few points of contact with that of the other. Concord gives way to discord, intimate affection to indifference; and, finally, the end of the matter is strife or unhappiness. Under such circumstances it is easy to understand the recent cry that marriage is a failure; for nothing but failure can attend any enterprise which is not founded upon mutual understanding, common effort, and a common purpose. It makes very little difference whether the enterprise is in the way of commercial management or domestic management; the salient rules that govern the one may with equal justice be applied to the other. In both there is the strongest need to recognize fundamental requirements, to prepare for the efficient administration of them, and to undertake the working out of such requirements to their logical results which an elevated ideal demands.

The problem which the present time has to solve is the adaptation of its domestic conditions to the changed circumstances of commercial life. We must revert to the state where the women of a household had as active a share in its for-

tunes as men, where the women's responsible positions and occupations were as sharply defined as men's, where natural energy had as wholesome a method of expression in one as in the other. The woman of to-day is a more intelligent creature than her predecessor and ancestress of the eighteenth or seventeenth century. She has larger needs, a larger range of potentialities, and an enlarged outlook. These opportunities are fine things in their way, but they bear with them their commensurate share of responsibility. The woman of to-day has greater privileges than ever before; but also she must know that her duties should likewise be interpreted in a more developed and more strenuous manner. Instead of giving less of herself to her duties, she ought to give more; she ought to bring to her work an increased zest, a more logical method, a greater efficiency than was formerly expected. There must be a distinct correspondence between what she expects to give and what she expects to get. The demands of the past, instead of being lessened, ought in all likelihood to be increased, for in no other way can the progress of the world be furthered. The spirit of the present time demands thoroughness of preparation, intensity,

and devotion to principle in a greater degree than at any other period. And women must participate in this movement to as great an extent as men. The well-meant efforts of many women to increase the family's income, and to obtain an outlet for their own activity by plunging into business enterprises cannot go to much further lengths without evil consequences. For the stability of the home and domestic institutions will inevitably be adversely affected. Women must, in the final analysis, be the ones who set the standard of the home; and the ideals and practices which they represent are the patterns by which the household will be guided.

The further inquiry about what means may be employed to remove the disabilities and the hardships of women in particular and families in general will be best answered by considering certain fundamental facts, and holding to certain elementary truths; and when these facts and truths have been ascertained, the next step consists in adapting the current conditions of life to them. We must recognize that domestic careers exist, and have their value in the scheme of existence, just as surely as commercial or professional careers. They are not the simple pursuits that the general public so commonly

takes them to be, but, on the contrary, demand as thorough preparation and as intelligent study as any other work. The objects which they are intended to serve are among the worthiest and the most vital which can occupy human attention, for they include not only the comfort and the social progress of the family, but its very existence as well. In former times, when the opportunities which women possessed of going out into the world and mingling in its struggle, its successes, and failures, were very limited or did not exist, there was no choice for them but to stop at home and devote themselves to the occupations which the home provided. In those times they wove the cloth which clothed the family; they made the candles that illuminated the house; they preserved the fruits and the meats that were to last over the hard season of winter. The man had one work in the outer world, the woman had another in the inner.

As customs changed, as labor-saving inventions grew in number and complexity, the balance became disturbed, the unprotected position of men forced them to observe the changes and keep in consonance with them. The comparatively protected and isolated position of women allowed them to go on in much the same chan-

nels as before, and did not necessitate as prompt and entire a conformity to the new methods. As the result of inventions and new methods, wealth increased; but the demands of business and professional life became greater, and the standards set for success became higher. Men acquiesced with comparative readiness in the new demands and the new standards, and thus the business part of the world has gone on with no more than temporary disturbances and interruptions. There are many persons now living who well remember the hardships and industrial disorders that arose from the extensions of railroads into territory where the carrying trade had previously been done by sail-power, horse-power, or man-power. And the consequent changes occasioned local hardships, local upheavals, local dissatisfaction. But these were no more than temporary phases which in the course of a few years passed away, and were replaced by other and superior industrial conditions. The hardships gave way to ease, the upheavals to quiet, the dissatisfaction to content. The business life of these localities increased and flourished, for the business men saw the futility of stupid resistance, they recognized the demand for newer plans of work,

they welcomed the prospect of greater outlays of specialized skill.

Let us ask in all fairness whether similar changes, and free acquiescence in their necessity, have come about in household management. And in making the inquiry I am not impelled by any manner of sex-feeling or sex-jealousy. For I recognize to the full the valuable parts of women's character, their possibilities of self-sacrifice, their generous willingness to respond to worthy appeals, and their fund of devotion to a worthy cause. At the same time, it is quite clear that they have not participated fully enough in the spirit of the age which calls for a clear-sighted view of the exigencies of everyday life. They, as well as men, know that a woman's work has always been and must always be connected with the home. The best exponents of the sex have never attempted to deny this, and at most have justified the taking up of business careers and the desertion of home life on the plea of paramount necessity. The whole excuse is that the man is not able to accomplish enough alone, is not able to make enough money to support the family on the scale that has become common; and that therefore the girls and the women must

leave their homes to help them. In the meanwhile much of the necessary work is done by various servants, who, in turn, want to help their families.

Another and more logical solution of the difficulty is possible. The woman must recognize and conform to the greater demands for specialized work. Since being a wife and mother is her best and natural profession, she must fit herself for its duties; and she must clearly have in mind the greater needs and the more complicated duties which the present time demands. She need not weave cloth for clothes, she need not dip candles, she need not collect potash and fat for soap-making. But she has other work that requires a greater degree of study and preparation for its learning. She must know that these times require a keener intellect and a greater energy than any former period in the world's history, and she must fit herself to develop such qualities in her husband and children. These things cannot be learned after she has become a wife, for then, and before then, they must have been in active working. Long before she assumes these tremendously important duties, she ought to know how the greatest amount of nutrition is to be obtained from the

smallest expenditure of time and money, what nutrition means, and how it may be obtained and conserved. She must know what work is to be done in a household, how and when it is to be done, as well as every advanced method by which one may augment the health, comfort, and pleasure of the family. She ought to know what health is and what sickness is, how one leads into the other, and the wonderful changes that can be accomplished with a knowledge of hygiene, and sanitation, and elementary biology. She must have information of her prospective duties as a mother, so that the birth of a child may be an occasion for rejoicing rather than a harbinger of extravagant outlay, largely increased household expenses, and domestic disorder. She must know what the child's growth entails, what demands will be made upon her store of information and ingenuity. She must, most of all, be prepared to take entire charge of her offspring, recognizing that this is the proper and natural outlet for her self-sacrifice, her willingness to respond to ideals, and her devotion to worthy causes. Moreover, she must constantly have the conviction that she is morally responsible for all these facts and conditions; that the burden of duty

weighs upon her just as heavily as if she were working under a written contract. Indeed, she ought to feel the responsibility even more keenly than any form of mercantile agreement could make her realize. As matters now stand, the woman, as soon as she marries, is apt to feel that she is answerable to no one, and that there is no standard for her work except the one which she chooses to elect. But as surely as such a plan would work disaster in business affairs, just so certainly must it produce domestic irregularity, disorder, and failure.

The proper sphere for women is not to fight in the outer world for a miserable wage in dollars. Her potentialities are too fine for that, and in submitting herself to the consequent competition she is losing too much. She is much more able to save at home, to prevent countless occasions of waste, to raise the standard of healthfulness, of self-reliance, and usefulness in her husband and children, so that the burden of support is not too heavy for a man to bear. If she accomplish that, if she can acquire a good enough sense of proportion so that the foolish tendencies to artificial extravagances of methods and household manners are kept within bearable limits, she will do a great

deal to end the competition between the sexes. Such competition is unnatural, unprofitable, not susceptible of a desirable outcome. The cry, "Give us labor!" is right; for no one can live without work, and enough work. But let us beware lest we look far off for this opportunity to expend our energies and develop our characters, while we are unmindful of the opportunities which lie immediately before us, so close, in fact, that we stumble over and tread upon them. The change must come, not from without the household, but from within it; not by the woman's entering into competition with her father, husband, and brother in sorts of work where she must necessarily occupy an undesirable position, but by increasing her value at home, by diminishing the amount of needless waste — in a word, by fitting herself for her vocation as carefully as she would if she wished to employ her male relatives in a commercial labor of value and responsibility. As much as home-content is better than home-discontent, as much as peace is better than discord, as much as real prosperity is better than artificial show, so much is the true training of women better than what is so commonly given. "Give us labor!" is a good enough cry; but "Let us do the labor that is within our hands!" is a better.

CHAPTER II

THE PREGNANT WOMAN

THE pregnant woman is the centre of the world's progress; she must regard herself as endowed with a great responsibility, whose pleasures are as sweet, and whose possibilities for good are as vast as those of any position in life. She should look upon herself not only as the giver of a living pledge to her husband, but also as the transmitter of humanity itself, of all its endeavors, hopes, and aspirations. Her function, while on the one hand private and domestic, is on the other a matter of world-note, of the upbuilding of the race and the working out of every right-minded dream of the poet and philosopher. She must realize that in this matter, as in every other in human affairs, there is a necessity for exact preparation, for the discernment of elements of strength and weakness, and for the recognition of the methods which will increase the advantages and decrease the disadvantages of the situation.

The pregnant woman should recognize that one of the best preparations for the efficient future of her child is the efficient present care of herself. In this condition the welfare of both is so closely interwoven that a point of separation between them cannot reasonably be made. During this preparatory period the child is growing and developing, is laying the foundation for the future blossoming of mind and body, just as surely as in the later times when he requires meat and drink, shoes and caps, gowns and books. From the very moment of conception he begins to be a human being with definite needs; and carelessness of his welfare during his prenatal existence is fully as inexcusable as ignorant and stupid ordering of his affairs after birth. His various physical requirements and functions have as distinct an existence at one time as at the other. Instead of breathing through his lungs, he breathes through the maternal placenta; instead of absorbing food from his stomach and intestines into his blood, he is nourished directly by the blood of his mother. If her blood is poorly oxygenated and nourished he feels the effect immediately and intimately. And in proportion to his extreme feebleness and immaturity

he must necessarily be well or ill influenced. But the main fact that physiological activity exists is as true of one time as the other. Nothing can possibly be more important, from the standpoint of the collective welfare as well as that of the individual, than a discriminating knowledge of the relations of parent and child; in other words, of heredity. The general belief that descent acts in some blind and unchangeable manner is not only wrong, but also infinitely mischievous. While the oft-quoted aphorism that a child's training should begin two hundred years before his birth may be true enough, nevertheless a highly important fact which calls for an equal amount of consideration is that the immediate progenitors have a great part in the matter of a child's health and strength; and that, most of all, the nourishment which the mother can and does give before his birth will have much to say in deciding what manner of person he may grow to be. And when one speaks of health and strength, the terms have so wide an application that they include the vitality of bone, muscle, and nerve tissue, of body and mind.

Thus the prospect of the child's birth must be a matter of constant thought and preparation,

not only in the way of providing for his physical requirements, but also in so disposing of the mother's forces and energies that she will undergo the minimum of wear and tear while obtaining the maximum of normal activity. She must maintain a calm and placid mind, should try to develop a cheerful manner of looking at the world, must endeavor to see the beauty of life and all its relations. In olden times the Greeks decorated the rooms of pregnant women with beautiful statues, that the mind, dwelling on the images of strength and loveliness, might obtain a more favorable impression than it formerly had, and thus would hand on to the new-born child a heritage of a like nature. While the physiological ideas involved in this custom may have been misty, nevertheless, there was a large element of practical truth in it; for the woman who realizes that she can to a notable extent, by controlling and regulating her physical and mental condition, mould the body and mind of her unborn child, has progressed to an appreciable extent in the direction of being an ideal mother. Such a woman will keep a strict account of her thoughts and emotions, will try to encourage beautiful and worthy ideas and ideals, will

endeavor to make her everyday life square with these theoretical conceptions, and similarly will eliminate unfavorable acts and their consequences. Nothing that in any way affects her will be considered as trivial, for every fact, whether it is great or small, has its commensurate influence. Similarly, no burden of painstaking will be too great for her strength; for she is the beginning of generations that may change the face of the world. The stimulant for good of such a course is not to be overestimated; it will serve as a pillar of cloud by day and a pillar of fire by night to guide and restrain; it will keep alive the sense of responsibility and promote the conviction that the pregnant woman is one of the real makers of the world and its destinies. Viewed in this light, the condition represents a great opportunity whose importance, as far as the welfare of the community is concerned, is not exceeded by that of any profession or vocation in the world.

It is noteworthy that a belief in prenatal effects upon the child has from times immemorial been more or less prevalent, although as commonly interpreted it has no foundation in fact. The so-called maternal impressions are

no more than fortuitous thoughts and accidents which are supposed to leave their impress in some indelible manner upon the child. Thus, as an example, a woman may be frightened by the sight of an ugly or deformed person, by an accident, by some chance blow, fall, or misstep; in other cases she may have had bad dreams whose grotesqueness haunts her even during the waking hours; in yet others, she may have heard some shocking news, or may even be afflicted by an equally disturbing train of thoughts which fascinate her by their persistence and ugliness. In almost all cases the apprehensions are ill founded and should receive no attention. It is a noteworthy fact that the most fanciful and easily alarmed women encounter the greatest number of alarming sights and accidents, and are afflicted with the most stubborn obsessions. Nevertheless, these very women in the greatest number of cases bear children who show no marks of injuries; and where such abnormalities appear, their occurrence can usually be explained on other and more reasonable grounds. If one wishes to state the matter in the form of a general rule, one should say that the growth of a child before birth is as regular and as fully subject to physio-

logical laws as after birth, and that on account of the protecting circumstances of the fœtus, ordinarily trivial accidents rarely produce important results; moreover, the main factor in the infant's development is the normal nutrition of the mother, her healthful activity, and the wise regulation of her daily life.

Thus a woman in the course of a visit or an afternoon walk may see a cripple or an invalid, or may be startled by some animal; in other cases she may inflict some slight injury upon herself, or may encounter another person who has undergone an accident. In such cases it is no uncommon experience for her to begin a course of worry, of self-tormentings, of belief in the possibility that her child may bear in his body or mind the likeness of these events. As a matter of plain fact she is doing more harm by the worry than the thing which she fears can ever accomplish. For if such a transitory concept could have any power, then similarly every act and experience of her daily life would be faithfully portrayed in her offspring. Such a connection would result in a child that was a veritable patchwork, a freak, or a monstrosity. It is absolutely opposed to every rational interpretation of ordinary children as we see them

from day to day. If a defect does finally appear, its origin assuredly has a more logical basis than such fleeting cloud-shadows. There must rather be some more organic defect present in the child's nourishment, which is translated into a local or general manifestation, according to the various circumstances of the case. This is normally regulated by the mother's general condition rather than fortuitous impressions which come from without.

There is an additional and noteworthy thought which if fairly considered ought to clear up one's ideas about maternal impressions. If a passing emotion or impulse of an unfavorable nature can injure the unborn child, why should not every happy emotion or impulse benefit him ? If the sight of a cripple can blast his growth, why should not the sight of a finely formed person benefit him ? If the hearing of bad news can depress the future gayety of his mind, why should not the reception of good news equally elevate it ? Practically always one hears of injurious maternal impressions, never of helpful; and this irrational lack of consistency merits some common-sense thinking. One can always offset the bad impressions by possible good ones, so that the result

of the comparison is equality. This is really the normal view to take; and it has the further advantage of imparting a healthy control of mind and body.

Such control involves an intelligent oversight of all the ordinary faculties and functions. The pregnant woman ought to have a diet which, although liberal, excludes articles of food that are hard to digest or have small nutritive properties. Thus, all fried foods, "made" dishes and salads, greasy and fatty preparations, and pastries should be avoided; coffee and tea may be taken in moderate quantities, and light and effervescent wines may similarly be advised. The ordinary meats, fish, fresh vegetables, and fruits must constitute the meals rather than dainties, relishes, and the usual articles that a fickle, capricious, and sometimes morbid appetite may seek. In fact, this element of normality should be the keynote of her daily routine. Instead of searching for, recognizing, and exaggerating abnormal factors, she should in every possible manner repress them. Her condition is not an unnatural one; on the contrary it is one that is physiologically characteristic of her whole being. This view will tend to dispel many of the perplexing doubts

concerning the arrangement of her time. The day may well be begun by a pleasantly cool shower- or plunge-bath on arising. This bath, since it lasts for a very few minutes, and since it should be followed by a brisk rubbing of the body, is not too severe for even a delicate or nervous person. Then there will be a greater zest to the appetite, and the light breakfast of fruit, cereal, eggs, and chops will be more eagerly welcomed than otherwise. After breakfast, and as soon as household duties permit, she may take a walk, the length and rapidity of which are proportioned to her energy and vigor. The remainder of the morning may be devoted to her ordinary domestic work. After lunch she should take a nap for about an hour, which may be followed by another walk, drive, or visiting. In the evening the ordinary domestic recreations may pass the time, and occasionally she may see a play at the theatre or hear a concert. Especially on such occasion she must resist the temptation to remain up late, for sufficient sleep is one of the main factors in a healthful life, most of all for a woman who has to supply nerve energy not only for herself, but for her unborn child as well. The proverb "*qui dort dine*" applies to such a person

with more force than in all likelihood to any other; and its good effects will be seen in lessened emotional disturbances, fewer nervous manifestations, and rarer complaints of inordinate fatigue.

Such a general scheme as the above may seem difficult of accomplishment to some women who believe that the demands of their household and growing family take up all their available time. While in some cases reasons of domestic economy prevent as much liberty as one might desire, nevertheless, in most homes — even those that are supported on moderate incomes — the wife's time and energies are often unnecessarily frittered away in a poorly arranged plan of work and superintendence. Indeed, one of the greatest needs in the ordinary household is a carefully arranged system by which each certain piece of work is made to begin and end at its fixed time, where there is the exchange of duties between different members of the family or between different servants, where every routine need is provided for in a schedule that should be as direct and businesslike as the working of a successful factory or mercantile establishment. If this is done, and I know by experience that it is not impossible or un-

reasonably difficult, the increased opportunities for exercise, recreation, and care of self which the ordinary wife and mother may find at her command will be sufficient and gratifying. Wherever there is an accumulation of duties and work, or the presence of several persons with their various needs and desires, there must be a controlling discipline, which will regulate conflicting interests, prevent loss of time, and promote good feeling and ease of temper. Doubtless there is no place where wise management can be better demonstrated than in the ordinary household.

Of all the subjects of preparation which the pregnant woman must consider, none is more susceptible of intelligent management than her method of dressing. If this matter is poorly arranged she will experience discomfort, undergo unnecessary expense; she may suffer in health and surely will present an ungraceful, uncouth, and, possibly, immodest appearance. But such undesirable conditions need not exist, and, indeed, may with the help of proper costumes be replaced by those that are convenient, healthful, and seemly. Clothing may, unfortunately, cover one's nakedness, and yet suggest too much of the form; it may pro-

tect the body from heat and cold, and yet the protection may be partial or unevenly distributed; it may decorate, and yet not beautify. Knowing these things we must try to select and make the clothing of the pregnant woman with a view to providing a sufficient lightness, warmth, freedom of movement, and a due regard for appearances. While in ordinary circumstances it is not desirable either to follow the changing modes too slavishly or to neglect them so completely as to make the impression of eccentricity, in the special period of pregnancy a woman should subordinate the usual obedience to the current styles to the reasonable demands of health and convenience of herself and her child.

The underwear should be of wool, the thickness of which must be suited to the season; for this reason she should have three different weights: the lightest for summer, the medium for spring and autumn, the heaviest for winter. Some people prefer for underwear the so-called natural wool, others choose a mixture of three-quarters wool and one-quarter silk or cotton; of late a tendency to choose a linen mesh has begun to make itself felt, and also some "reformers" have been endeavoring to discredit the use

of wool and substitute cotton in its place. After the whole matter has been thoroughly discussed, and there is no necessity for repeating all the lengthy details here, a white or gray wool, with or without a partial admixture of silk or cotton, will be found to give the greatest amount of satisfaction. The form of the garments should be what is now popularly called "union," that is, the shirt and drawers should be woven together into one piece. When new suits of this pattern cannot be readily obtained, the separate garments may be fitted and sewed together so that a fair substitute results. In this way one can lessen the amount of weight that otherwise would hang on the hips and, at the same time, slightly decrease the unsightly and unnecessarily thick layers of clothing which accentuate the outlines of the protuberant abdomen.

In the matter of underskirts, a rational moderation must control one's choice. Especially must their number be not too great. In ordinary cases they need at most be no more than two, a fairly short flannel and a mediumly long muslin one. They must be sufficiently full, and, instead of being closed by means of buttons, may be fitted to the changing form by a

broad band to which a draw-string is attached. This draw-string should be in two parts, one to control the back and the other the front. Both should issue from their pockets at the side, where they may be tied without making a noticeable lump. In place of drawing them very tightly and thereby holding them fast, the band of the skirt may be supported from the waist or corset cover or by straps which hang from the shoulders. If additional warmth for the lower extremities is desired, it may be obtained by equestrian tights made of a knitted fabric, which, while being very comfortable, are not bulky. The stockings should be sufficiently warm and must be held up by side supporters, and not by garters, which are secured to the waist instead of by the common device of an abdominal band. The corset waist is one of the most important garments, and deserves the most careful thought and attention. It must be strong, light, pliable; if the seams are somewhat heavier than the rest of the garment, it will, in spite of the drag of the skirts and stocking supporters, keep its shape. Its shoulder pieces will hang the weight from the shoulders, where it will be least felt. In place of this corset waist some women prefer an

empire corset, which is so narrow that it makes no pressure on the abdomen, but supports the breasts sufficiently well. If such a corset is worn, the waist may be somewhat lighter than the usual corset waist and somewhat heavier than the ordinary corset cover; for one must remember that the empire corset is not designed to support either skirts or stockings, which, therefore, must be fastened to the waist. The ordinary corset should, without the slightest hesitation, be laid aside for the period of pregnancy and lactation. I do not care to begin a discussion of corsets for ordinary occasions, for most women under such circumstances will persist in using them without regard for their unhygienic influences. Although no competent observer doubts that they may and do bring about harmful results, nevertheless, as long as they help to improve appearances and make dresses set better, they will in all likelihood continue to be worn. But when a woman is pregnant, a further and vastly weightier factor comes into the equation — the future welfare of her child. The question ceases to be a merely academic one of hygiene or æsthetics, but comes to represent a modified degree of physical and mental development; or, stated differently, the

moral, intellectual, and material efficiency in the child's various future spheres of activity. It is the same idea that applies to all the details of preparation for his birth, and the effort to free him from as many disabilities as possible. The only difference is one of degree; no matter what may be the divergence of opinion about other details, everybody who is familiar with the subject believes that at this time the ordinary corset should be laid aside, for the intervisceral pressure and the restricted opportunities for free movement are facts of radical importance. The usual excuse that the woman's back needs the support of a corset, is not sufficient; for a strong waist or the comparatively harmless empire corset will give enough support. At the same time, a much better plan would be to exercise the weakened muscles of the back, and thus increase their strength to such a point that artificial support is not needed.

The outer dress and the methods of designing it so that it will best conceal the necessary deformities are commonly matters of supreme importance to the usual woman, and rightly so. For at this period of her married life there are many occasions when the ordinary peace and quiet of the household are disturbed, and human

nature is often so frail that it will willingly suffer inconveniences from a graceful, well-gowned woman that it would tolerate grudgingly from one who was dowdy, awkward, or unpleasing. At the same time, the necessity of frequently altering the size of the skirts or of obtaining new ones is apt to make the attempt to look as well as possible a somewhat costly one. For this reason, if for no other, it is advisable to prepare for this period as efficiently as possible. The main requirements are to get rid of the belt or any horizontal lines about the body and to emphasize the vertical lines in the costume. For this reason a street dress may be made in the empire style, if one desires to have separate waist and skirt. The waist should be made with a loose, falling front like the "fedora" or "matinee" waist. The skirt should be cut with all its breadths of equal length, and should be full enough to allow of being let out as far as may be required. The extra length in the front, as well as the back, may be hidden in tucks or folds, and as occasion demands may be let out. This garment should not be closed in the back with buttons or hooks, but preferably may be shirred to fit the form by two draw-strings, one for the front and the

other for the back, which issue and are fastened at the sides. Another good plan is to make two side openings to the skirt instead of one behind. These plackets should be from twenty to twenty-four inches in length. The waistband is to be broad and elastic and may be in separate pieces for the front and back, having long ends for tying. When the wearer dons the skirt, she ties the long ends of the rear waistband in front, and then fastens those of the front waistband in the rear. Naturally the garment must be made full enough to conform to the increasing size. And if it is heavy, it may, when so desired, be supported by straps to the waist or from the shoulders. A still further plan, which I have found to give satisfactory results, is to make the skirt full at the waist, closing it in the usual manner behind. Over the placket a broad single or double box-pleat is laid, which must be tacked to the waistband above and to the skirt below the placket. As the abdomen increases in size, this box-pleat may be shifted more and more from its original position, so that it fills up the empty space between the two sides of the opening. For house wear, wrappers which are loose in front should be worn; the back may be given a fair

degree of grace by means of a watteau fold or pleat.

For walking purposes a sufficiently long cape or cloak should always be used, to the rigid exclusion of the tight jacket or coat. Not only will the general appearance be improved, but also an added degree of comfort will be obtained. Finally, the costume may be completed by the addition of heavy, fairly broad shoes that permit of planting the foot comfortably and strongly upon the ground. The usual belief that a light, thin shoe is easier to walk in is an undoubted fallacy. Especially is this true when the shoe is made on an artificially shaped last, with the plain purpose in view of making a certain dainty appearance rather than giving the protection that wind, weather, and the hard condition of the pavements demand. A small vamp, a narrow toe, a thin sole, and a high heel that is placed too far forward are all conditions that make for disability in walking. On account of them the foot cannot be planted full upon the ground, the muscles of the legs and back cannot relax and contract in a normal manner, and the weight of the body is not properly distributed. As a result the woman complains of pains in the back and thighs. She

takes insufficient exercise, and tissue-change as well as nutrition is defective. These disabilities can be removed by wearing a shoe that is long and broad enough, that has a strong, heavy sole, large enough vamp, and a low heel that is placed sufficiently far back to distribute the body weight where it can be best borne.

There is one detail of dressing connected with walking in bad weather which I consider of no little importance. It concerns the use of waterproof leggings that must come to or above the knee. The exposure and discomfort that come with wet skirts are usually sufficient to keep indoors a woman who otherwise would gladly take her regular exercise in spite of rain, snow, or hail. Therefore, in bad or threatening weather I always advise my patients to wear such leggings, for I know that a prolific source of catching cold is thus removed, and that they can with impunity face a storm which otherwise would be prohibitory. There is nothing essentially injurious in walking in rain or snow, provided that one is properly clothed. On the contrary, the brisk glow that follows the struggle with the weather is commonly exhilarating. With sufficient protection, with the

prospect of wet skirts flapping about chilled and wet lower limbs removed, the majority of women, who otherwise would be mewed up indoors to their undoubted detriment, will gladly take their daily walk.

Another bar to comfort and the taking of exercise, which is fortunately not very common, is a very large, prominent, or pendulous abdomen. It will be sufficient to suggest the use of an abdominal band which goes under and supports the abdomen, and closes in the small of the back; it may be supported and held in place by straps across the shoulders. Its ends may be fairly narrow, but its middle portion must be broad and of a hollow shape, which will adjust itself accurately to the outline of the body. If this device is properly adjusted the wearer will obtain enough relief to change a painful and laming pregnancy to a comparatively comfortable one. It is by such small details that many disadvantages are overcome; and, in general, one may say that life as a whole is no more than a massing of such details, each of which is worthy of conscientious attention. In the preparation for a child's birth there is a paramount opportunity to exhibit fidelity to an ideal, thoroughness of preparation, wise fore-

thought, and a broad comprehension of ultimate possibilities.

While the pregnant woman is arranging all these details, it will be wise for her to prepare for the lying-in. The things which she needs, while not numerous or expensive, are too important to be neglected. She should have at least two or even three agate or china-ware basins, and one or two large pitchers or ewers for the use of the physician. Also there should be a pound carton of absorbent cotton and some clean gauze or cheese-cloth with which the nurse may make napkins or pads for the mother. The cheese-cloth should be washed, dried, and cut into pieces about eighteen inches in length by twelve inches in breadth. The cotton may be cut into pieces about nine inches long, six inches wide, and one inch thick. When the cheese-cloth is folded about the cotton, one has an ideal napkin that is convenient, comfortable, and cheap. To insure surgical cleanliness, these napkins, as soon as they are made, should be packed in a strong piece of muslin or a towel, which is then to be securely pinned up, placed in an oven, and baked for about twenty or thirty minutes. The package should not be opened until after the child is born.

The abdominal binder may be made from one or two thicknesses of unbleached muslin; it should be large enough to span and overlap the woman's girth, while in breadth it should extend from a short distance below the breasts down to and even below the hips. To secure it in place one should have a few large safety-pins.

The careful woman, in order to protect the mattress, will obtain two pieces of rubber sheeting, one of which is large enough to cover the whole mattress, while the other is no more than half as big. The first is to be securely fastened all about the edges, but the second is to be used loose. Immediately after the child has been born, the smaller may be removed, while the other prevents any overflow or dripping of fluid from soiling the mattress. In the course of a day, or when the physician thinks it safe, the second may likewise be discarded.

In addition there should be a plentiful supply of towels, a baby's bath-tub, which the physician may need in resuscitating a partially asphyxiated child, a piece of narrow, strong tape (which is to be sterilized by boiling) for tying the cord, a bottle of carbolic acid or tablets of bichloride of mercury for making solutions, and a bottle of boracic acid solution for washing the baby's eyes.

CHAPTER III

THE BABY'S OUTFIT AND NURSERY

LONG before the baby is born, his outfit should have been obtained in its entirety. If one waits until the pregnancy is about to end, there will usually be so much of a hurry in procuring the various articles, in struggling with transient attacks of indisposition, and making the various preparations for the mother's needs, that some things may be forgotten or neglected, or in the hurry a compromise be made and inferior or less convenient garments and utensils be accepted than otherwise. One should go about preparing the layette as a matter of love and not merely of duty or necessity. Into every little skirt or band some affection, some wholesome aspiration should be put; under such auspices care and work lose their tediousness, and every hour of labor becomes sanctified as a partial preparation for the doing of useful deeds and the thinking of wholesome thoughts.

There are a few general rules which should

control the making and the choice of clothing. The garments must be warm, light, and entirely without harshness. Infants need more warmth than adults, and a lack of it depresses their physical condition more than one would usually suppose. And not only must there be sufficient warmth, but, also, it must be evenly distributed. A baby whose chest is overloaded and whose legs are bare cannot be expected to keep up a nicely balanced thermal equilibrium, but, on the other hand, is apt to fall into congestive disturbances. The fabric of which the garments is made must be as soft and bland as possible, for the delicacy of a young baby's skin is not to be estimated by our mature standards. Its delicacy seems at times almost pathological, and only by forethought and scrupulous care are skin disorders, with their resulting acute suffering, avoided. In addition to these fundamental requirements, one should remember that a child in arms depends for a large part of his exercise upon the freedom to move arms and legs at will; therefore his clothes must be free enough to avoid constriction and all manner of rigorous binding. There must be as few pins used as possible, and even the number of buttons and buttonholes must be kept down to the minimum

in order to allow the girth of the garments to be adapted to the requirements of growth. Their place is well filled by tapes and draw-strings, which plainly have many advantages and few objectionable features. Lastly, there must be a sufficient number and variety of garments to allow as frequent changes as the requirements of health and convenience demand.

A proper outfit for a well-cared-for child should contain at the least the following articles: —

1 hamper or bassinet or basket.
2 pieces of diapering.
3 flannel bands.
4 shirts.
6 pairs of stockings.
2 pairs of "booties."
4 barrow coats or pinning blankets.
4 nightgowns.
4 slips.
2 wrappers.
3 coats.
1 shawl.
2 caps.
1 pair of knit tights.
4 bibs.
Safety-pins, large and small, in sufficient number. And, lastly, a box of fine talcum dusting powder.

Although this list should not be abbreviated, it may be indefinitely enlarged. Not only are there many variations in quality, but the num-

ber of pieces may be increased according to the fancy and means of the parents. The main advantage of an increased quantity, outside of reasons of luxury, is the smaller number of washings through which each piece must go, and the consequently lessened amount of shrinkage and injury that necessarily follows. I have made no attempt to mention all the different varieties of garments because such detail is unnecessary and would, in addition, create the impression that many more articles are required than are really essential. Moderation in providing the layette is by all means desirable, since it may have much to do with fixing the standard according to which the dressing of the child will be gauged for years to come. The mother should keep before her eyes the fact that the child, much sooner than she is apt to fancy, absorbs ideas of station and scale of living, and that the habit of luxury is more easily formed than discarded. She must recognize frankly and definitely her present and probable future economical scope, and as a matter of convenience keep well within reasonable limits. For such reasons, as well as the equally important one of good taste, she should try to make the layette reasonably inexpensive, good

in quality, not overburdened with ornamentation, and frankly serviceable.

One of the first articles which may be obtained is a hamper or bassinet. One of liberal size is to be recommended, and preferably should have one or more portable trays; if it rests upon castors it can be so easily moved about that its usefulness is materially enhanced. Such a hamper has many advantages over the ordinary dressing basket, since it can contain the whole outfit, and thus saves much time that would be wasted in going to and fro in search of the various garments, while simultaneously it promotes habits of neatness and order. In the hamper each sort of clothes should be placed in a certain position which, when once found to be practical, must be always maintained. It is an excellent plan to have the hamper divided horizontally by a tray, which not only may separate different sorts of articles but also may be of considerable use in carrying garments from one place to another.

The material for diapers may be cotton or linen, and should be bought by the piece. Although the linen is somewhat more expensive than the cotton, nevertheless it remains so much softer and shrinks so much less that its

advantages overweigh the added cost. The diapers may be cut in three sizes, and one should progress from the small to the larger as the child grows. Convenient sizes are squares of sixteen inches, eighteen inches, and twenty-four inches. A sufficient quantity of these should be provided, because every diaper should be thoroughly washed and aired after being used, even if it has been no more than dampened; and since it is often possible that the washing cannot be promptly done, there must be enough clothes to serve for at least two or two and a half days. It is wise to provide a covered pail to contain the soiled diapers until they can be washed, for they should not be thrown with the other clothes of the baby or of the rest of the family.

For the first three or four months the child should wear an abdominal band, which after that time may, unless there are special indications for continuing its use, be discarded. Three are usually sufficient — one for the night, one for the day, and the remaining one for change. They are often made of plain flannel, but a better and preferable quality is made of soft knitted wool, of cashmere, or of a mixture of wool and silk. It is rarely neces-

sary to make them more than six inches wide, and one should not commit the mistake of buying some of those recently devised which extend to the armpits, thus tending to restrict the easy play of the chest walls and the contained organs. The main reason for putting a band on an infant is not entirely for warmth, as is so commonly believed, but rather to prevent a hernia, or rupture of the navel. The custom of using these bands for the whole of the baby's first year is to a certain extent a superfluity; the main purpose will have been attained at the end of two or three months, for after that period there is not much danger of an umbilical hernia.

The little shirts that go next to the skin should be supplied in two weights, if the mother wishes to get no more than is absolutely necessary, but in three if her means permit a somewhat greater expenditure. These garments are commonly of too small a size, and are not cut with the view of their inevitable shrinkage and the child's natural growth. They should have long sleeves, and instead of being fastened by buttons may advantageously be closed with tapes. In most cases the buttons are so small that after a little use the holes become unduly large, and, consequently, the garment is open

quite as often as closed. These shirts may be made of wool, of a mixture of wool and silk, or of cashmere, all of which may be bought in various thicknesses from a fairly heavy material to the thinnest gauze. They must extend from the neck to below the buttocks, so that there is no likelihood of their shrinking to or beyond the edge of the diaper. It is scarcely necessary to say that those used during the day must be changed for others at night. The first, after being thoroughly aired, may be used on the following day.

In regard to the stockings there are two main observations that require attention: they must be of the proper weight, and by all means should be sufficiently long. The first requirement is easily satisfied, for every well-stocked shop has a large enough assortment to allow a selection for the different seasons. The question of length is not so easily settled, because almost all the stockings that one finds for sale are decidedly short. There is no doubt that they should extend sufficiently high upon the leg to allow of being pinned to the diaper. On most children, as usually dressed, they fall down about the ankles soon after being drawn on, and thereby leave a part of the leg quite

bare. The natural results of exposure and an unequal distribution of heat are not only hard to avoid, but also the habit is commonly apt to promote congestive disturbances. In addition to the stockings, the child, as soon as there is a chill in the air, should wear little knitted shoes, usually called "booties." These, also, may be of two weights and should be changed sufficiently often to keep them sweet and wholesome.

To complete the list of underclothes we need four or more barrow coats, popularly called pinning blankets. In former times these consisted of a band of variable width joined to a long skirt of flannel. It has always been and must always be one of the principal garments, since it covers most of the body; and, if properly made, it gives warmth, does not hinder the child's movements, and is easily manipulated. To make it a perfect garment its upper portion should be changed and lengthened, and its skirt shortened. Instead of a band, the form should be that of a sleeveless coat, and the skirt should extend no lower than a few inches below the baby's feet. The habit of clothing an infant in very long dresses is a thoroughly unnecessary one; there is no excuse for it, but, on the contrary, there are distinct reasons against it.

Such skirts are expensive, clumsy, and hard to manipulate. They add materially to the amount of the weekly wash, and, by their weight, especially if heavily embroidered, restrict the child's movements and help to make an unnecessary burden for the nurse or mother. My objections to them were crystallized about six years ago, when I saw a somewhat weak infant, of about five months of age, whose leg had been broken by the twisting of a weighty, heavily worked, and unusually long skirt. This accident, to be sure, is a very rare one; but the fact remains that, although rare, it is nevertheless possible. The only thing that one can urge in justification of long skirts is their supposedly decorative effect; but the value of even this is very doubtful, and at best should not be regarded as important. The barrow coat, then, in its abbreviated form and fastened in front with tapes instead of buttons, makes an easily adjusted, comfortable, and well-nigh indispensable garment, which contributes much to maintaining an even degree of heat. In extremely cold weather a modified coat containing sleeves may be used.

Outside of the barrow coat comes the white dress, or slip, made of cambric or nainsook.

No especial directions concerning its form need mention, excepting the emphatic suggestion that it must not be unreasonably long; in fact, it should be only long enough to cover the barrow coat. The various slips may be made of different qualities of material and ornamented with the various decorations with which every woman is familiar. It is not out of place to advise simplicity rather than lavishness in this matter; for the baby may look sweet and dainty without being made to imitate an overdressed lay figure or a gaudy fashion-plate.

A very useful garment is a warm wrapper, made of cashmere, flannel, or any plain material which may be tufted. It is designed to wear at night, early in the morning, after the bath, or whenever the child needs a warm, comfortable dress that may be put on and off with the least delay. It must be long enough to cover the feet comfortably, large and long in the sleeves, and sufficiently snug in the neck to prevent gaping. It may be closed at the neck and on the chest by ribbons or cords, and about the waist may have a heavier cord which will keep the free edges from falling apart. Such a wrapper may at an emergency be used as an auxiliary nightgown, although the ordinary

night-dresses should be made in different weights to suit the seasons. Thus, they may range from cambric and nainsook to flannel and knitted goods. They should be large and roomy, long enough to keep the feet thoroughly warm, and closed with tape or ribbons instead of pins or buttons.

Very little more need be said about the layette, excepting a few minor suggestions. Thus, one often sees an external diaper made of stockinet or other rubber material. The use of such an article is to be condemned on the ground that it sets a premium on laziness and lack of attention, that it is provocative of irritations and disorders of the skin, and that its logical effect resembles closely that of a poultice. This is easy to understand when one considers that a poultice is designed to maintain artificial heat and moisture on a selected part of the body, which is exactly what the impervious diaper-cover is bound in some degree to do. There are rare occasions, such as when the child appears in a public place, on which a contrivance like this may be used for an hour or two. But these occasions ought to be very rare, and even then with sufficient care the child can be kept in an unobjectionable

condition with no more than his usual clothing. Another suggestion may be made concerning bibs. The use of these articles is to save the front of the slips from being soiled with food and saliva. They should, therefore, be made of a closely woven material which does not readily absorb and hold moisture. A sodden bib may possibly be the means of dampening and chilling the chest, and thus give rise to a bronchitis or other related disorders. A useful bib for hand-fed babies may be made by folding up its lower margin to form a wide pocket into which drippings of food may run and be held. Such a bib must naturally be made of an impervious material, and should be removed shortly after feeding has been completed.

Now that the baby's outfit is completed, one should consider the problem of selecting a room for the nursery and furnishing it in a comfortable, hygienic, and attractive manner. The sunniest room in the house ought to be chosen, for babies like flowers need plenty of sunshine and air. A southern exposure is to be preferred to any other, for under such conditions the requirements are most apt to be met. The best facilities for ventilation are essential, and, at the same time, are not hard to provide.

Every day the windows must be left open for a sufficient time, both in winter and summer, to insure the thorough airing of the room. And while they are closed the entrance of fresh air may be insured by one or more of several methods of ventilation. The heating of the room should be so devised as to contribute some assistance to this end. The method which gives the best results is that of a grate fire, properly guarded by high, strong fenders. A good stove that is heavy enough to prevent overturning, especially if it is surrounded by a wire guard, is also a very useful means; at the same time it does away with the large amount of dust and dirt that a grate fire is bound to cause. A Franklin burner also has many advantages, especially as it is very clean. The most objectionable method is the ordinary steam heat, which clearly ought not to be allowed in any well-appointed nursery. In the other methods the rarefaction of the air caused by the heat and the draught of the chimney bring a corresponding amount of fresh air into the room through the crevices and joints of the windows and doors, and thus serves our purpose more actively than one would suppose.

A more direct way of ventilation is through

some device connected with the window. One of the simplest and best of these consists of lowering the upper sash about six inches and filling the open space with a plain piece of board. The window is then closed at top and bottom, but open in the middle. The cold air is directed, by the situation of the opening, to the upper part of the room, whence, on account of its weight, it gently descends and produces no draught. Another way is that of the old-time ring ventilator, which is set in a pane of glass in any of the windows. This gives the minimum of trouble, but it is not so easily controlled as the first device. There are yet other methods, such as the box ventilator, which is attached to a permanent opening at the top or bottom of the window, and is opened or closed by a sliding panel or similar device. By such means it is always possible to have pure, fresh air in the room; and one must see to it, as a prime necessity, that there should never be a stuffy, close, or unpleasant atmosphere in this most important part of the house. While we are working on the windows we may order the iron gratings for the lower half, which are designed to prevent the child from leaning too far out or falling to the ground. This prevention

is, naturally, superfluous in the first year of life; but it is well, so long as one is fitting up a nursery, to make it complete and thus save the trouble of making additions later on. A further detail is the supplying of two sets of roller shades or blinds for the windows, one of a light color and the other of a dark blue or dark green holland. The latter is to be used in darkening the room at whatever time of day the baby may be sleeping. As will be seen later on, this is a matter of some importance.

The floor may be made of hard wood and covered with skin rugs, or of the ordinary soft pine painted and similarly covered. The rugs are designed to give warmth even more than for their decorative effect. Their greater cleanliness is the reason for preferring them over carpets, and, therefore, they must not be so large as to render an easy and frequent removal into the air difficult. Fur rugs make a desirable covering for parts of the floor, especially as they serve, when the child is old enough to like stories, as a basis for all sorts of tales concerning animals, strange lands, and adventures. Some able mothers prefer a covering of fine Japanese matting in place of the polished or painted floor, on the ground of its greater

warmth, greater sureness for the foot, and almost equal ease in being kept clean. If a few mats or rugs are strewn here and there, its attractiveness is considerably increased. The covering of the side walls and ceiling deserve the expenditure of thought and taste, for they have much to do with deciding the character of the room and the first formative impression upon the child's eyes. Some good, attractive, elemental color should be selected as the main note in the decoration and should be logically and tastefully carried out in the wall, ceiling, and even the furniture.

But before the decorations are begun one should rehearse clearly what sanitary demands must be answered in this part of the room. These are scrupulous cleanliness, lack of inclination to acquire disease germs as well as dirt, and ease in renovation. Obviously, the best surface for such purposes is a smooth, hard, and waterproof one. Therefore, the walls and ceiling should be covered with an oil color, with or without a coat of varnish, or with a paper which may be varnished. For this purpose one can now buy some very desirable papers with an attractive pattern showing children at play, animals sporting and at rest, or

pretty sketches of landscape. Some are even made with a hard, glossy finish which permits washing. This is one of the essential features of every nook and cranny of a well-appointed nursery, for by this means we are able to diminish or prevent the likelihood of various sicknesses. When the wall-paper is of a decorative, thickly covered pattern, little or no additional ornamentation is needed from pictures; but if pictures are hung up, they must likewise be of such a nature that they may with impunity be washed, or of so little value that on proper provocation they may be destroyed. These articles are of secondary importance, and with a sufficiently decorative paper need be supplied in small quantities or not at all. The main objection to them lies in the possibility which they furnish of collecting dust and harboring germs of disease and fermentation. A similar objection may be made against curtains and portières, the use of which has the additional objection of increasing the danger of fire. But if they are a part of the furnishing, they must not be placed in close proximity to a gas-jet, a stove, or an open fire of any sort.

The furniture must follow the same rule of sanitary impeccability. Every piece of it,

besides being light and strong, must offer little opposition to being scrubbed or cleansed. For this purpose the use of enamel paints in any desired colors is highly to be recommended. Thus the chairs should be of wood or wicker, painted white or any other light color; and if upholstery is desired it may be supplied in the form of cushions, which are to be kept in place by ribbons or tapes. If a sofa or lounge is to have a place in the room, it should be of similar material and similarly covered. The cushions should be covered with a waterproof fabric, with or without an additional slip cover of chintz, cretonne, denim, or similar wash goods. In this way one can insure the maximum of comfort, convenience, and cleanliness with the minimum of expense, unnecessary work, and danger of harboring infection. This general plan need not be confined to the pieces here mentioned, but to every article that is susceptible of such treatment.

The other essentials are a bath-tub, a wash-basin, a toilet chair, a screen, and an ice-box. The bath-tub must be small enough to be moved about with ease, as well as to occupy no extravagant amount of space when not in use. One of the best models is made of a large pouch

of rubber cloth suspended from a rectangular wooden frame, which is supported upon collapsible legs. This tub is inexpensive, easily handled, and sufficiently high to enable the mother, while sitting comfortably on a chair, to give the bath quickly and thoroughly. In this respect it has a decided advantage over the ordinary type of metal tub, which is so low that it makes the bathing of the child a matter of considerable discomfort for the mother or nurse. Of course, it can be raised by means of a chair or a bench; but such a device is really a clumsy one. In those favored houses where there is a well-heated bath-room attached to the nursery, the large bath-tub may be covered in part by a temporary wooden grating upon which the baby's tub may rest. This prevents the discomfort of the low position, it does away with the danger of splashing the floor, rugs, and furniture with water, and, if the small tub is filled by means of rubber pipes attached to the faucets, requires the least trouble in preparation. But as in most cases the bath-room is not connected with the nursery and, in addition, is almost always colder in winter than the other rooms in the house, it generally cannot be used for this purpose.

The wash-basin is used for all washings other than full baths; it may be in the form of the ordinary basin, but a better type is where it is divided by a partition which makes two compartments, one for hot and the other for cold water. The partition should have a handle attached to its upper margin by which the basin may be carried with ease. The toilet chair should be made of painted wood or wicker, so that it cannot be injured by frequent and thorough scrubbings. It should form a part of the first outfit, for its use, as will be later on shown, need not be deferred as long as the present custom demands. The screen should be a serviceable article, not designed for decoration alone, and will be found very useful in shielding the child while he is asleep, being bathed, or being dressed. It also should be made of waterproof material which permits of as frequent washing as scrupulous cleanliness demands; it must be strong, light, and not too large to render its constant handling in any way burdensome. The rule must be made and steadfastly enforced against using the screen, or, in fact, any other piece of furniture in the nursery, for the drying of soiled or damp diapers and other garments. Such a habit is to be

heartily discouraged, for it tends to permit or sanction laziness and lack of cleanliness, which are often followed by skin diseases or other troubles of the child's buttocks and body in general. Whenever any of the garments has been in any way soiled, no matter how slight the soiling may be, it should be thoroughly washed and rinsed in the kitchen or laundry, dried, aired, and ironed before being used. It is so easy to disregard this rule, the temptations — especially to a careless nurse — are so common, and the consequences may be so much out of proportion to the seemingly trivial nature of the offence, that no exceptions should be allowed.

The ice-box is meant to hold the unused food of a hand-fed infant, or that of a somewhat older child who is yet too young to be fed on the varied diet that comes with later years. It may be made of tin or zinc, and must be so light that its weight offers no objection to frequent washings and airings. Its partitions must be removable, for at least once a week they should be taken out, and the whole structure thoroughly scrubbed and allowed to dry in the sunshine. An ice-box that is not surgically clean is a fruitful source of the "spoiling" or fermenta-

tion of food; and if such fermentation did not exist, a large proportion of the diseases of infancy would be unknown. The conscientious observance of these details, and others like them, is the very basis of an uneventful and successful conduct of the infant's career. The importance of the matter may be estimated from the fact that the child during this period is going through one of the crises of his life, that the formative character of the first months has much to say about what he is later on going to be, and that efficient administration of all the minutiæ of babyhood should — in order to form a correct conception of their value — be translated into forms of the thoughts and deeds, the physical and mental state, of the future man and woman, as well as those who are dependent upon them. The man who said that he would rather write the songs of a people than make their laws, had enough imagination to see beyond the border-line of facts; but his projected empire would have been vastly increased if he could have made a choice of the customs and habits of young children.

CHAPTER IV

FEEDING

THE problem of feeding a child is not a particularly difficult one if the mother understands clearly what the baby needs and how to make the various changes and modifications that a normal development necessarily entails. Most of all it is important to grasp a few fundamental principles which are at the basis of nutrition. This question of nutrition is one of the main subjects of thought and effort that an intelligent mother has to reckon with; it constantly reappears in one form or another, touching upon and involving one interest after the other. In the last analysis it stands for most of what we want a child to be — the personification of vigor and strength of body united with vigor and strength of mind. There is little doubt that mental action is closely bound up with physical competency, in the same way that we know quite positively that disturbed action of the body is usually, if not always, associated with dis-

torted function of the mind. These two factors stand to each other in the relation of complementary parts of an intricate machine and their interdependence is as inevitable as it is intimate. Thus the fact of feeding a child comes to have a higher significance than merely satisfying his hunger; we may go even farther, and say that the feeding of a child means much more than the feeding of an adult. For in the latter the desired object is merely to maintain the settled equilibrium of the matured organism, to continue a settled condition. In the former, however, it has the additional burden of supplying new elements of growth in order to change an unstable to a stable equilibrium, of making something exist where formerly it did not exist, of changing tissue to so great a degree as to be equivalent to a difference in kind.

The feeding of an infant should be restricted to the mother's milk. If this natural food is sufficient in quantity and quality it forms the ideal nourishment. All the needs of the organism are fulfilled, at very little danger of the food's possessing an improper composition or being contaminated with germ life or impurities. Naturally this is a matter of paramount importance and demonstrates how perfectly nature

adapts means to ends. In addition, however, there is another factor of salient importance which makes the nursing of the child by the mother a matter of the greatest value; for the exceedingly intimate relations tend to promote the bond between parent and child, the mother with every nursing period recognizes that the little one is a very part of herself, and that a very part of herself is contributing to make and maintain his life. The resulting sympathy is and must be exquisitely intimate and gives the possibility of insight into the child's physical and mental being which otherwise cannot be obtained. As far as the baby is concerned, who shall say that he is not mightily influenced by the fluid which means life to him, by the wonderfully close relations with the one who nurses him, by the unconscious absorption of characteristics which make up the family personality! Such influences are at the bottom of the belief that blood is thicker than water and to their cohesive force the tremendous power of child- and parent-relationship is due. The woman who suckles her baby enjoys a great opportunity, for which she ought to be deeply grateful, to assist in moulding him into the form that he ultimately will assume; and nothing but

absolute necessity should induce her to throw away this great privilege.

In some cases, however, on account of physical incompetency or sickness, she is compelled to forego her privilege and duty. When this necessity has been demonstrated as a fact, she should promptly acquiesce in it, as she should in any other misfortune. Once that the milk has been shown to be too deficient for its purpose, the child should be weaned and a substitute food be given in its place. There should be no hesitation or compromise in this, nor should the baby be fed in part on an artificial food and in part on the breast. For if the mother's milk is markedly imperfect, it continues so to be, whether an artificial food is or is not added; and the result is apt to be a continued state of imperfect nutrition. This is apt to be the case where the mother is of an overnervous, hysterical disposition, if she is markedly unhappy, if she is thoroughly exhausted, or if she regulates the factors of rest, diet, exercise, and relaxation so poorly that a normal secretion of milk is out of the question. Here the quality of the milk may be so bad or it may vary so widely from day to day that a gradual but real starvation must necessarily be present.

An exception should be made of those cases, which are to be distinguished by the physician, where the error in the constitution of the milk is merely temporary, or due to some passing condition in the mother. Thus the total quantity may be too small, although the quality is good; in this case an increase in the amount of liquids in her diet will often remedy the fault. In other cases the quantity may be too great, but it can be reduced by the opposite means of reducing the amount of fluids consumed. If the milk is too watery, its relative amount of solids may be increased by taking less exercise, decreasing the quantity of fluids consumed and shortening the intervals between the feedings. If the milk is not watery enough, a desirable effect may be produced by reversing these suggestions. The amount of cream or fat in it may be increased by adding more meat to the diet, and lessened by eating less meat. The proteids are increased by a more sedentary life, and decreased by adding largely to the amount of exercise. These rules are naturally meant to apply to cases of minor disturbances, and, if they are carried out with the aid of a competent physician, will undoubtedly be of considerable use. In general, however, the wisest course for

a nursing mother to pursue is to eat regularly and liberally of a sensible diet that includes soups, meats, fresh vegetables, eggs, and meats; she should avoid pastries, hot breads, condiments, and articles that her ordinary experience and knowledge have demonstrated to be indigestible. Milk especially should have an important place in the daily dietary, and in addition may be the basis of a light meal that should be taken before retiring for the night. In many ways it is superior to the ordinary alcoholic drinks, whose value as milk producers is apt to be overestimated.

When, in spite of well-directed efforts to conform to a normal and rational plan of diet, exercise, and self-control, the supply of milk is unsatisfactory, a choice must be made between hand-feeding and a wet-nurse. Theoretically the latter has much to recommend her, but practically her selection has many weighty objections. In most cases she is the victim of unhappiness, ill-treatment, or viciousness; very often she comes from a decidedly unfavorable class of society; her habits — either secret or avowed — are commonly bad, and the change from comparative poverty to the luxury that is lavished on her for the sake of her foster-child

is apt to be demoralizing. Too commonly one sees such a woman — ignorant, lazy, and wrong-headed — elevate herself into the position of a petty tyrant, who domineers over the whole household by means of her influence with the child, and the common fear of interfering with his food supply. The position naturally lends itself to the possibility of abuses, and the temptation for an undisciplined woman to take advantage of it is certainly strong. Besides all this, the psychical effects of the intimate relation are of undoubted, even if indefinite, importance, and offer a constant menace to the mother's peace of mind. Of course, if an unobjectionable person could be obtained, one who was between twenty and thirty years of age, who was quite healthy, with an entirely good milk supply, whose habits were unimpeachable, who had had a previous child, whose temper was even and well controlled, whose disposition was peaceful and affectionate, and whose outside connections were not embarrassing, the problem of substitute feeding would offer less difficulty than is usually encountered.

Practically, the only other method that remains, if we discard the wet-nurse, is the use of

ordinary cow's milk which has been sufficiently modified to make it approximate as closely as possible to mother's milk. Occasionally an attempt is made to use goat's milk or ass's milk; but the difficulty in obtaining it is so great, the supply is necessarily so limited (one ass giving no more than one-half pint to one pint per day), and the composition would nevertheless so clearly need modification, that we can, as a rule, get more satisfactory results from good, pure, cow's milk. Having decided that this is to be the basis of the food, one is then confronted by the vexing question of boiling it or leaving it raw, of sterilizing, pasteurizing, or peptonizing it. The original objection to raw milk was not at all a chemical, but merely a hygienic one. Physicians came to know that it often served as the carrier of disease germs. Thus, tuberculosis, typhoid fever, diphtheria, and other sicknesses have spread, so that almost all the disorders that afflict cows, the farm-hands, and the milk handlers have been, at one time or another, attributed to the use of the unboiled fluid. Moreover, if the cans and pails are not kept scrupulously clean, various degrees of fermentation occur that give rise to diarrhœal troubles and low forms of poisoning. In order

to avoid such contingencies, the practice of boiling the milk in order to kill the germs came into use. Before a long time passed, physicians began to notice that while the amount of germ disease decreased, the number of cases of malnutrition decidedly increased; and, promptly enough, the cause was traced to the alteration in the character of the milk produced by the boiling. This alteration consisted of coagulation and increased difficulty in digesting the albumin, changes in the milk-sugar, and changed relations of the emulsion in which the fats were suspended. The result was, that children were taking a food that was materially different from what it originally was supposed to be, and on account of which they ceased to thrive.

In order to do away with these evil effects, but at the same time to kill the germs, the process of sterilization was devised. This consists of subjecting the milk to a temperature of 212° F. for a comparatively long time. Most germs were thus destroyed, while it was hoped that the milk would nevertheless be good. Extended experience showed that a sterile milk could disappoint our expectations of its nourishing powers, and that many children who had

been carefully fed in this way became afflicted with scurvy as well as less pronounced forms of malnutrition. Then a further change was made by reducing the amount of heat to 167° F. and cutting down the length of exposure to it; this process, called pasteurization, was intended to undo the evils of sterilization, as sterilization was intended to reform those of boiling. Unfortunately there are observers who find bad results from the use of pasteurized milk, and who are therefore forced to go back to sterilization, or to strike at the root of the whole trouble by insisting upon an uncontaminated milk, which they refuse to alter by heat. There is no doubt that such milk has marked advantages over all others, but until of late it could not be had. In recent times, however, state inspection of cattle has done much to clear tuberculosis from the herds, and there are a number of dairy-farms where the animals, their stalls, the utensils, the clothes and the hands of the milkers and milk handlers are kept so clean that the danger of infection is reduced to a minimum. In addition, also, to such care in collecting and handling it, the milk should before it leaves the farm be poured into bottles, which then are to be packed in ice or in refrigerated compart-

ments, and thus kept at a low temperature until it is delivered to the consumer. The essence of the precautions is to have milk from a healthy, well-fed cow or herd of cows, which has not been allowed to be contaminated by impure contact or air.

But even if the milk is quite pure, it is not, on account of its chemical composition, ready for use. Both cow's milk and human milk contain the same elements, but not in the same relative proportions. These elements we know as proteids, or albuminous matter, fats (commonly called cream), sugar, mineral salts, and water. An analysis of them shows their relation clearly: —

	Human milk.	Cow's milk.
Fat	3.50%	3.50%
Milk-sugar	6.50	4.30
Proteids	1.50	4.00
Mineral salts	0.15	0.70
Water	88.35	87.00

The main difference, as we can easily see, lies in the proportion of proteids; the smaller variations in the sugar and salts are of no great importance. And not only is the percentage of proteids greater in cow's milk, but also the character of the material is different. Before it can be digested, it becomes coagulated by the

acid and the gastric juice into a comparatively hard mass; in human milk, however, it is changed into fine, soft flakes, which, on account of their form, offer a larger surface to the digesting agents, and thus are easily and quickly changed into the ultimate condition in which such material is absorbed into the circulation. The main problem, then, has always been to modify the milk in such a way that the proteids would be reduced by one-half or more, while the other constituents remained practically the same. It was for this purpose that "milk laboratories" have been established in some of the large Eastern cities, whose business it is to prepare milk for infants according to the formula which the physician submits to them. While this is the easiest way to obtain a properly modified milk, it is, unfortunately, out of the reach of most families for the two good reasons of locality and expense. The great need is to spread the knowledge of how to modify the milk at home without too much trouble and expense.

Although it is not feasible to give all the directions necessary for modifying milk to suit the various needs of children whose digestive systems are in an abnormal condition, it is dis-

tinctly desirable to describe an easy method of preparing a suitable milk for a healthy child. To do this, one needs nothing more than the cream of good milk and a definite solution of milk-sugar. If a bottle of milk be placed on the ice for five hours, the cream will rise in such an amount as to constitute 8% of the whole; if it is allowed to stand six hours, it will constitute 12%. The cream, after having been allowed to rise, should be decanted off into a clean bottle, and used according to the following directions. The milk-sugar may be made in a solution with boiled or distilled water by any druggist or at home. In the following mixtures a 7% sugar solution and a 10% sugar solution are employed. For a child of two months or less, we may prepare a mixture containing the small proteid percentage which his age calls for in the following proportion: —

Fat	3%
Sugar	6
Proteids	1

To make such a mixture one should use one part of the 12% cream and three parts of a 7% sugar solution. Mix well.

For a child from three months to one year of

age, one may increase the amount of proteids, as in this formula: —

Fat	3.5%
Sugar	6.0
Proteids	1.2

In making this mixture, one should take one part of the 12% cream and two and one-half parts of a 7% sugar solution. This, likewise, must be well mixed.

For the two months succeeding the first year, the proteids may be yet further increased, as: —

Fat	4%
Sugar	7
Proteids	2

This is made by mixing equal parts of the 8% cream and a 10% sugar solution.

A sufficient quantity of the desired mixture may be made to serve for twenty-four hours. It should immediately be poured into as many bottles as there are feedings, each bottle should be corked with a plug of aseptic absorbent cotton, and all should then be put on ice. Each one before being used should be warmed by being immersed in hot water, the cotton plug removed, the nipple should then be adjusted, and the preparations are thus completed. If any milk remains in a bottle, it must under no circum-

stances be used again, but should immediately be thrown away. As one can easily see, it is not hard to know exactly how much to prepare; therefore there could then be no waste, and the work will be done at one time and quickly. All this is easily determined by making out a plan of the number of feedings per day, the time of each, the quantity of each, and the total quantity, as follows: —

SCHEME FOR FEEDING AN INFANT, WITH INTERVALS AND QUANTITIES

	INTERVALS BETWEEN FEEDINGS	AMOUNT IN EACH BOTTLE	NUMBER OF FEEDINGS PER DAY	TOTAL AMOUNT
1 week	2 hours	1 ounce	10	10 ounces
2 weeks	2 "	1½ ounces	10	15 "
3 "	2 "	2 "	10	20 "
2 months	2 "	2½ "	10	25 "
2½ "	2½ "	3 "	9	27 "
3 "	2½ "	3½ "	8	28 "
4 "	3 "	4½ "	7	29 "
5 "	3 "	4½ "	7	31½ "
6 "	3 "	5½ "	6	33 "
7 "	3 "	6½ "	6	39 "
8 "	3½ "	7 "	6	42 "
9 "	3½ "	7 "	6	42 "
10 "	3½ "	8½ "	5	42½ "
11 "	3½ "	8½ "	5	44 "
12 "	3½ "	9 "	5	45 "
13 and 14 mo.	4 "	10 "	5	50 "

Let us take a few examples and see how easily the work is done. Suppose we wish to prepare the food for a baby six days old. We need ten ounces of milk, which is made up of

one part of 12% cream, or . . . . . 2½ oz.
and three parts of 7% sugar solution, or . . . . 7½ oz.
Total, 10 oz.

As for this time of life there should be ten feedings per day, the mother had best have the ten bottles ready when the mixture is made; they may all be filled at one time, stoppered, and put on the ice until needed.

Again, suppose the child is six months of age. For this period there should be thirty-three ounces of food, which would be composed of

one part of 12% cream, or . . . . . 9½ oz.
and two and one-half parts of 7% sugar solution,
or . . . . . 23¾ oz.
Total (approximate), 33 oz.

Since there are to be six feedings, six bottles must be prepared, each containing five and one-half ounces.

Again, suppose we want to prepare the milk for a baby of twelve months. The quantity is to be forty-five ounces. We then need

one part of the 8% cream, or . . . . . 22½ oz.
add one part of a 10% sugar solution, or . . . 22½ oz.

Total, 45 oz.

This quantity is to be divided into five bottles, each of which contains nine ounces. As in the other cases, all the bottles are to be stoppered with aseptic cotton, and placed upon ice until used.

One more detail may be required in some cases: the normal reaction of human milk is slightly alkaline. Since cow's milk is frequently neutral or slightly acid, we may add a small quantity of lime-water to make the desired change. The necessity of the change is ascertained by dipping a small piece of red litmus paper, which any druggist or chemist will supply, in the cow's milk and finding that it is turned somewhat blue. A neutral reaction gives no change at all, while an alkaline milk will change blue litmus paper red. If the milk on several testings has shown itself acid or neutral, the lime-water may regularly be added in the proportion of from 3% to 5% to the water in which the milk-sugar is to be dissolved.

A most important detail of hand feeding is the care of the bottles and nipples. If they are not scrupulously clean, particles of milk adhere

to them, decompose, and give rise to a large number of gastric and intestinal diseases, such as vomiting, diarrhœas, and summer complaint. In most cases such disorders ought not to exist, and the child who suffers frequently from them has a just cause of complaint against the mother. Such cleanliness is insured by scrubbing, boiling, and rinsing the bottles, nipples, and all the utensils which are used in the daily preparation of the milk. Each bottle as soon as it is used should be thoroughly washed with soap and water and a bottle cleaner; it ought then to be boiled for from twenty to thirty minutes, and, finally, put in a solution of borax until it is wanted the next morning. Before being used, it should be thoroughly rinsed with hot water. The nipples, as soon as a feeding has ended, should be drawn on to a finger, scrubbed with a brush, soap, and water; they may then be turned inside out, replaced on the finger, and again scrubbed. They may, as the next step, be thoroughly washed in hot water, and, finally, be thrown in the borax solution until used again, when they must be well rinsed. These nipples, in order to be easily manipulated, should have a plain, conical shape, somewhat like a dunce's cap, and should be made of plain black rubber,

with an aperture that is not too large. The bottle should preferably be tubular in form, with gradations which mark the ounces and half ounces blown into the side. All attempts at decreasing the labor involved in feeding the child, by air vents in the nipple, rubber tubes connecting the nipple and bottle, and variation in the shape of the bottle on account of which it need not be held, are bad, and ought to be discouraged. Such devices make surgical cleanliness impossible, they promote laziness, diminish the rightful attention which the child deserves and demands, and serve as prolific sources of serious sickness. The feeding of a child is important enough to call for the nurse's undivided attention, and anything which interferes with this duty must sooner or later have vicious results. During the process the child should be held in the arms, and the bottle must be so inclined that the nipple is almost full; in this manner the flow of milk can easily be regulated to suit the baby's capacity to drink, while at the same time the possibility of sucking on an empty nipple is obviated. The habit of permitting a child to take a fraction of his food, to sleep or play or become irritated by a bad position, and then to begin

nursing again after the milk has become more or less chilled and stale, must not be tolerated.

Yet another method of feeding is that which does away entirely with bottles and nipples, and substitutes in their place a cup and teaspoon. This change has much to recommend it, for it does away with the labor of keeping the bottles and nipples clean, and simultaneously diminishes the danger of infection of the gastro-intestinal track. Likewise it prevents too rapid nursing, as well as "wind sucking"; the feeding is completed at one sitting, and the child's habits in general are better kept under control. One of its main advantages is the ease with which it allows weaning to be accomplished. In this period of the child's life the main difficulty lies in replacing the bottle with a spoon, and everybody knows the disturbances which are apt to result. Under the circumstances suggested above, these disturbances would not exist, and the baby would go from one stage of his youthful career to the succeeding with almost no evidences of struggle.

Something ought to be said concerning the use of the proprietary foods which are so extensively advertised and widely employed in all

classes of society. If one wishes to make a general statement, one is quite safe in condemning them all along the line. They really have no good reason for existence — outside of the purely commercial one which gives profitable employment to their manufacturers. The artificial food has never been made which can adequately take the place of pure, fresh milk, properly modified. The fact that hundreds of children have grown and thrived upon them has little to do with the question; for many children are so vigorous that they will thrive upon all manner of food-stuffs which we know are meant for older stomachs. As I heard a bright woman once remark, "There are some babies that you can't kill." In regard to such children the question is not how well the little ones develop on this or that food, but rather, how much better they would have developed on a properly modified milk. To such origins we can trace a large proportion of all cases of rickets, infantile scurvy, and a seemingly endless series of obstinate cases of malnutrition and malassimilation. The various foods may be divided into certain classes, whose methods of manufacture are not radically dissimilar. Thus, the Liebig foods, such as Horlick's Food, Mellin's Food, Malted

Milk, and Hawley's Food, represent a combination of flours which have been treated with diastase until the starch is changed into forms of sugar, called maltose and dextrine. The milk foods, such as Nestlé's, the various Swiss foods, and Gerber's Food, represent condensed milk which has been sweetened and supplemented with dextrinized flour. The farinaceous foods, such as Ridge's Food, Imperial Granum, Robinson's Patent Barley, and Hubbell's Prepared Wheat, usually consist of a combination of flours, the starch of which has been partly converted into sugar. Carnrick's Soluble Food consists for the most part of sugar and starches; Lactopreparata has about the same composition, but in it milk-sugar replaces a part of the starch. Lactated Food is composed mostly of sugars and starches. The Peptogenic Milk Powder of Fairchild consists of pancreatin, lactose, and alkaline milk salts. The condensed milks represent ordinary cow's milk which has been evaporated in a vacuum, sterilized, and sweetened with cane sugar. The unsweetened variety can also be obtained.

The main fact to be kept in mind is that, whether such foods approximate more or less closely to natural milk, they must and do

necessarily lose something of their vitality, of their nutritive value, in going through the process of handling and manufacture. Not counting the fact that they are commonly over-rich in proteids, and that they vary in the percentage of fat, they are not as wholesome, not as invigorating as fresh milk. There are secrets in the products of cell activity which we have never been able to discover, and among them is that profound problem of trying to imitate this result of nature's work which is so familiar to us, and at the same time so inscrutable in the mystery of its making. This is at the basis of all our failures at making an artificial food; and until the problem is solved we should use the artificial foods, such as are commonly sold, only as a last resort.

Closely connected with this matter is the subject of weaning. The change from the breast to the bottle is commonly synonymous with domestic disturbances, with unquiet nights and days. In many, if not in most cases, the natural difficulties of the situation are emphasized and exaggerated by a lack of conviction and a want of firmness in the parents. This vacillation is an unfortunate characteristic of many mothers, and has a strong

tendency to diminish authority; at the same time it has the equally important — some people think more important — effect of lessening the functional activity of the stomach.

As was shown on page 82 the feeding should take place at regular intervals, and nothing should be allowed to interfere with this regularity; even if the child is asleep, he may with profit be wakened when the proper time for nursing comes. If this course is pursued he will not only contract habits of regularity but also will sleep more quietly in the intervals and at night. A little firmness of intention may be demanded of the mother to inaugurate and carry out such a plan, but the reward in the way of increased rest and comfort for both mother and child will amply repay the effort. It will be noticed that the amount of time laid out by the schedule for each day does not cover four-and-twenty hours; in the remainder the child is not supposed to receive any food at all, on the double principle of giving the child's stomach an opportunity to rest and at the same time developing a habit which permits both mother and child to sleep. The period of rest should be confined to the middle of the night, and will usually be man-

aged with ease if the schedule during the day is carefully maintained. When weaning is called for, the strict habit thus developed will be found to be of marked value. Under ordinary, normal circumstances the transition should take place when the child is one year old, and in most cases the process ought to be gradual rather than abrupt. One of the breast feedings may be replaced by a hand feeding; then, one or two days later, two hand feedings may be substituted, and thus one may continue until the breast is left untouched. During all this time, the integrity of the night must be kept untouched. The mother should be steadied by the conviction that one ill-timed yielding is apt to break up the habit of weeks, and that while thereby gaining a few minutes of peace she loses many hours of rest.

Under some circumstances, such as pregnancy, wearing out of the milk supply, or acute sickness of the mother, the change may have to be made before the beginning of the second year. In the last-mentioned contingency, where the necessity for artificial feeding is no more than temporary, the milk may be prevented from drying up by the consistent use of the breast-pump. In the other events

the best course of action is to recognize the necessity of the case, and to make the change without too prolonged waiting. On the other hand, when the normal nursing period closes in the latter half of the summer, the child may be kept at the breast, so long as the quality and quantity of the milk are sufficient, for a short additional period, in order to reduce the possible dangers of gastric infection that are greatest during the hot weather. This prolongation of breast feeding must be made with the full knowledge that the quality of the milk is apt suddenly to deteriorate, as well as the fact that in the beginning of the second year the diet normally calls for a food-composition and food-bulk which human milk cannot supply. Finally, when the child has definitely been taken from the breast, the flow of milk may be checked by tightly bandaging the breasts, or wearing a strong, sleeveless waist which has been snugly fitted to the form, and may be tightly pinned.

During the second year the foundation of the food must be good, wholesome, cow's milk. After the fourteenth month of age, most healthy children are able to digest it in its plain, unmodified form; but if any difficulty remains, it is almost always on account of the large

quantity of proteids. In such a case the use of the last modification, given on page 81, is to be continued. An additional element may now be supplied in the way of the various cereals; these are to be made into a thin gruel or jelly, strained, and mixed with milk. When the little one has demonstrated his ability to digest these articles, clear soups, from which the fat has been removed, may now and then form a part of the diet; next a well-baked apple, stewed prunes, and orange juice may by degrees be allowed. As the middle of the year approaches, he may eat a piece of zwieback, well-toasted, stale wheat bread, or toasted biscuit which has been dipped in milk. The next step takes him to where he may have a poached or soft-boiled egg, scraped rare beef, and stale bread. Naturally, all these things are not to be given at one meal. At this time it is unnecessary to strain the cereals as thoroughly as in the earlier months.

As a summary, one may lay out such a menu for a healthy child of fifteen months: —

6.30 A.M., cup of milk with toast or zwieback.

10.00 A.M., strained oatmeal with milk; toasted or crisp biscuit; orange juice; stewed or baked apple.

1.30 P.M., clear soup, chicken, beef, or mutton broth; piece of stale or toasted bread.

5.00 P.M., cup of milk; crisp soda biscuit or zwieback.

7.00 P.M. (just before going to sleep), cup of milk.

The question of feeding this growing child is now becoming a very active one. The mother must keep to the golden mean between too strict and too liberal a diet, for the one is about as bad as the other. She must know that there are definite needs to be subserved which must be closely understood. Good intentions alone are not sufficient, nor is the mere fact of a bountiful supply of food the only thing to be desired. She must know that the uses of food are various: to make new tissue, to repair waste of tissue, to act as fuel, to supply a reserve force for future emergencies, and to act as a guard against the exhaustion of tissue or the stored-up supplies of other food derivatives. In order to do this, certain elements of food must be present in sufficient amount, and must be thoroughly digested. The great difficulty in infantile life lies in the way of this sufficient assimilation. Thus the diet should be made up of fats, proteids, sugars and starches, mineral salts, and

water. The fats go to make up fatty tissue, and at the same time serve as fuel; the proteids, also called nitrogenous foods, are used to make muscular and tendinous tissue, and likewise to give heat; the sugars and starches go to make fatty tissue and to give heat. The mineral salts have various chemical uses that require no special mention. In infancy, the carbohydrates and fats hold a very important place, since they serve to develop bodily heat and to produce fat. As the child increases in age, the proteids must occupy a more important position, since they are the basis of muscular growth which progressively becomes more necessary. As examples of these various kinds we may select as representing the proteids, eggs, meats, milk, fish, gluten of wheat. As examples of fats we may mention butter, fat of meat, sweet oil, olive oil, the oils in some cereals. Among the carbohydrates are sugars and starches as they occur alone and in combination, as, for instance, in such vegetables as potatoes, and in cereals.

These various foods, while different in composition and process of assimilation, have the same general function of supplying energy in the form of muscular power and heat; and although the amount of potential energy con-

tained in the fats is equal to the combined amounts in the proteids and carbohydrates, nevertheless the needs of the youthful body and its faculty of absorption render the change from the small proteid percentage of infancy to the larger one of later childhood necessarily slow. For in the earlier period the predominant need of the organism lies in the combination of heat and protection rather than the various forms of more active energy; and as the child increases in development, the augmented action of body and mind calls for additional fuel that is designed to subserve these functions. As the need for so-called concentrated foods increases, the added means for helping in digesting them, such as the cutting and grinding action of the teeth and the additional caustic nature of the gastric secretion, simultaneously come into existence. The gastric juice of infancy has little corrosive action; it is not capable of dissolving cell envelopes, and its development into its later form is very gradual. Morever, when that later and more potent form is reached, every effort must be made to keep the food as pure and as normal as possible. Thus there is no need for the pungent and aromatic spices, since these things are used as whips to drive a

jaded appetite and digestion; there are strong objections against preserved, pickled, smoked, and dessicated articles, for they have been changed from their normal condition on account of economical reasons or because the adult palate longs for a greater variety than more nutritious food gives; likewise, cakes, pies, and fresh breads are undesirable, not on account of their chemical constitution, but because their physical condition permits of the formation in the stomach of a large, soggy mass, the exterior of which only is affected by the gastric secretions, while the interior remains unchanged; bran bread may often be profitably substituted for wheat bread, but the first as well as the second should not be used until it is stale; coffee and tea are also to be forbidden, since they contain almost no nourishment, but, on the other hand, have alkaloids whose action on the nervous system is unnecessary and undesirable for children. Again, fried foods of all sorts must not be allowed, outside of any consideration of what they contain, on the ground that the rapid cooking, the high degree of heat used, and the tough coating of deteriorated fat produce an envelope which is hard to digest, while the inner portion is usually affected in unequal

degrees in its various planes. The object in cooking food is to produce chemical changes which promote ease of digestion, greater potential solubility and assimilation, the development of extractives and aromatic substances in the food, and the stopping of fermentative action and bacterial life. These results are best obtained by boiling, baking, roasting, and broiling; and, as a rule, they must be thoroughly enough conducted to have the resulting changes take place through the whole substance of the food.

In making out the plan for the feeding after fifteen months, we may reduce the number of meals to four, and at the same time increase the number of articles, as in the following: —

Breakfast, 7 A.M. Cup of hot milk; stale bread or toast with butter; well-cooked oatmeal with cream or milk, but no sugar.

Lunch, 11 A.M. Cup of hot milk with bread or toast and butter; in place of the bread or toast one may give zwieback or crisp biscuit.

Dinner, 2.30 P.M. Cup of clear meat soup or broth from which the fat has been skimmed. A very small portion of scraped beef or beefsteak, or the bone of a lamb chop on which the child may bite and suck. He may have a piece of

bread, or baked or mashed potatoes and meat juice. For a sweet he may eat a small bit of curds and whey, custard, junket, rice pudding, or bread pudding. Of course all these dishes are not supposed to be given at one meal; the mother is supposed to make an intelligent choice, and vary the menu from time to time.

Supper, 6.30 P.M. Cup of hot milk with bread and butter.

From the age of one and one-half to three years the bill of fare may read as follows: —

Breakfast, 7 A.M. Clear juice of an orange, or the pulp of a baked apple, or apple sauce, or stewed prunes; hot milk; well-cooked oatmeal or cracked wheat or rice; stale bread or toast with butter. When the child is two years old he may have the half of a soft-boiled or poached egg; at two and one-half years of age he may get a whole egg.

Lunch, 11 A.M. Hot milk; stale bread and butter, or zwieback, or crisp biscuit.

Dinner, 2 P.M. Plate of clear meat soup or broth from which the fat has been skimmed. A small piece of roast beef, broiled steak, or lamb chop, breast of chicken, or bone of chicken or lamb chop. Whatever meat he receives must be scraped or cut into very small pieces.

Bread and butter; baked, mashed potatoes with meat juice; boiled rice with cream, rice pudding, bread pudding, curds and whey, junket, custard, stewed prunes with or without rice.

Supper, 6.30 P.M. Hot milk with bread and butter; milk toast.

After the child is over three years old his diet may be gradually enlarged. The meals should be reduced to three; but it will often be necessary to give a hungry youngster a glass of milk at half after ten in the morning, and possibly again at three in the afternoon. All foods must be plain, without other seasoning than salt; there should be no fried foods, "made" salads, no pickles or other relishes, no cakes, pies, coffee, tea, beer, or wines. The breakfast may be about half after seven o'clock, and should consist of fruit (orange, baked banana, baked apple, or stewed prunes), well-cooked oatmeal, cracked wheat, hominy, rice, or farina; boiled, poached, or scrambled eggs; hot milk; stale bread or toast with butter. Now and then the eggs may be replaced by a piece of broiled fish, which is not very fat, or a chop. Robust children often appreciate and thrive on corn meal, but their delicate brothers and sisters sometimes have trouble in digesting it.

The dinner should be at midday, and should always begin with a dish of clear soup, without fat, or a meat broth. There may then be some sort of broiled, roasted, or baked fish; or the soup may be followed by roast beef, chopped beef which has been broiled, broiled beefsteak, broiled lamb chops, roast lamb, boiled mutton, chicken, turkey, or squabs. One or two vegetables, such as baked or mashed potatoes, well-boiled spinach, purée of peas, young cauliflower, young beans, young carrots, stewed celery, or boiled rice, may be allowed with the meat. A glass of milk should always accompany the meal, which may end with rice pudding, rice and stewed prunes, or apple sauce, bread pudding, farina pudding, sago pudding, junket, curds and whey, custard, or one of the fruits mentioned in the menu for breakfast When the little one comes to be four or five years of age he may receive a portion of clear jelly, gelatine, preserved pears, peaches, apricots, or strawberries. And I have found that a bit of good cream cheese with a crisp soda biscuit is well liked and well digested by growing children; incidentally I may say that the nutritive value of this cheese is high.

The supper may be taken at six o'clock, and

should always be very light and simple. It may be made up of milk with bread and butter or soda biscuits, milk toast, a dish of rice, farina, or hominy with milk, or any of the various milk soups. Baked or stewed apples or apple sauce, if they have not formed part of the other meals, are very good to end the supper.

The matter of diet has at times an important influence not only upon the child's general health but also upon certain physical and mental functions. In this connection one can mention no more weighty factor than the condition which is commonly called habitual constipation. Children are often troubled by it, and as a curious fact the disorder seems sometimes to run in families. On the other hand, the habits of various members of one family may not at all resemble each other; and also the condition of an individual child may vary from one time to another. The whole problem rests upon several possible causal factors; and while diet is an important one of them, nevertheless the others should have some mention in order to give a comprehensive view of their respective values.

The very fact of childhood bears with it a certain tendency to constipation. For in the

early months of life the undeveloped pelvis has not room enough for the many coils of intestines which therefore are confined to the abdominal cavity. Here the yielding walls give no proper point of resistance, and therefore the muscular fibres are unable to exert themselves to advantage. An additional hindrance is the maintenance of any position during defecation other than a crouching one. A third reason is the congenital or acquired weakness of the intestinal muscular fibres which naturally are unable to do their requisite amount of work.

Such conditions can be and often are exaggerated by poorly devised meals, irregular times of eating, and a too rapid and insufficient chewing of the food. The choice of food is always important, even in infancy. "If an artificial food is the diet, it must be made to simulate in its physical and chemical composition mother's milk. If breast milk is the food, and if on analysis it proves to be deficient in fat, then the requisite amount of cream may be given after each feeding. If the milk be too rich in proteids, the daily life, diet, and exercise of the mother or nurse must be so regulated that the excretion becomes normal. If the milk for any reason remains abnormal, it is

much better in the long run to wean the child without delay."[1]

Older children should have such foods as are not too fine. Bread which is made from the whole wheat, graham bread, corn bread, and rye bread are better than that made from the thoroughly bolted wheat flour. Any fresh tender meat among those mentioned earlier in this chapter as desirable may be allowed. The desserts should usually be made of fresh or stewed fruits. The milk which the child drinks should be unboiled, and must contain a large percentage of cream. Both cream and butter are of considerable use in such a diet. Children over four years may have moderate amounts of good cream cheese. The diet should not include dried or canned foods, but in their place fresh foods must be used. In addition to such a plan, the child may be encouraged to drink liberal quantities of water. These measures reinforced by exercise, massage, postural treatment, and occasional medical oversight are capable of correcting almost any case of habitual constipation.

When a child is directed to drink liberal

[1] Oppenheim: "Medical Diseases of Childhood," The Macmillan Company.

amounts of water, the reservation must be kept in mind that the water should be pure. Under ordinary circumstances, especially in large cities, this quality is not easily obtained. It is really rare to find a water supply that can unreservedly be praised, and too often it ought to be condemned. As a result of this state of affairs, parents should see to it that the water which their little ones drink has been made acceptable and harmless. They can insure both palatability and safety by a proper method of filtration, which is not very hard to obtain. The filter must be attached to the supply pipe of the house, and not to a faucet. It must be so devised that no pressure is exerted by the common water supply upon the filtering medium, for the process must be one of slow percolation. Moreover, the apparatus must be of such a kind that the filtering membrane can easily be removed, cleansed, or renewed.

There is no doubt that by such a device a certain amount of the acute specific fevers as well as a respectable proportion of diarrhœal troubles may be avoided or diminished. Its use is the logical extension of our ideas of asepsis and the application of them to important although ordinary facts of life. But such facts

are the very ones that ought to receive our most careful attention, for they serve as the foundation of the more attractive features of our careers.

From the earliest possible time the habit of eating slowly and chewing the food very thoroughly must be insisted upon. If this is begun at an early enough age, it is easily learned and will prove to be a valuable acquisition for later years. If the child eats with an attendant or with the rest of the family, he should be allowed to talk to a reasonable extent; speech should be regulated, not forbidden. For with children, as well as adults, the act of speaking causes useful breaks in the steady course of masticating and swallowing food; it allows the gastric contents to be well mixed with the secretions of the stomach, and at the same time it provides an atmosphere of reasonable enjoyment that a child may claim as well as his elders. The rule that children should be seen and not heard is capable of too strict an interpretation that lends itself very readily to petty domestic tyranny. So long as there is a reasonable and healthy discipline in the household, every child should be allowed to talk, to take part in the family life, to feel

that he is an integral part of the home circle, and to realize that his words — even if they be not heavy with wisdom — will receive the consideration and attention which abiding love and a mild tolerance dictate. The ordinary child, whose environment provides suitable examples of self-restraint and good manners, learns in a surprisingly short time how to control himself within sufficient bounds to be reckoned as a human being, and not as a more or less untamed animal.

CHAPTER V

BATHING

THE necessity of cleanliness is not the only reason for systematic bathing; and although cleanliness is a sufficient reason, it is comforting to know that at the same time and by the same means a beneficial effect may in other respects be exerted upon the body. This fact holds good for persons of all ages; and in some ways the young child will receive a greater aid from the wise use of water than his parents. In him the process of tissue-change is especially active, secretion and excretion are naturally brisk, and the skin, which has an important part to play in all people, is in him particularly important. One must keep in mind certain plain facts about the skin, for it is more than a mere exterior finish to the body. In addition it is a most valuable organ of sensation, upon whose exact working much of our general physical safety depends, while at the same time it serves as the active agent of some of our most massive and

satisfactory pleasures. Besides this, it is an indispensable excretory organ, without which the life of the body could not be continued. By this means the organism relieves itself of a large amount of water, of carbonic acid, of urea, and doubtless of other matters; it seems quite certain that even bacteria may be thus excreted. In the process of draining off waste products, the skin bears a close relation to the kidneys: there is a marked similarity between the chemical composition of the sweat and the urine, while more than a few observers have noticed the resemblance between the anatomical structure of the skin and one of the essential portions (the glomerulus) of the kidney. Yet another function is that of a heat regulator, by which heat is freely radiated when the temperature is high, and kept within the body when the temperature is low. For this reason burns covering three-fourths of the surface are fatal; and physicians are thoroughly familiar with the seemingly strange fact that extensive burns so interfere with the distribution of heat that serious congestions of the internal organs occur, and may be followed by the formation of ulcers.

These facts are in themselves sufficient to show the necessity of keeping the skin active

and clear; but they are not all that ought to be mentioned. If it is true that the outer surface of the body acts as a sense organ, as an excretory organ and as a heat regulator, it is equally true that it exerts a considerable effect upon the circulation of the blood and is therefore a sort of "skin-heart." It is a noteworthy fact that almost a third of the blood is contained in the superficial vessels, and this large amount of fluid is directly influenced by the dilatations and contractions of the capillaries. The arteries are by no means mere passive conducting tubes; on the contrary they have a keenly sensitive nerve supply which causes them to contract when only a little blood should be in them, and again to expand when they ought to hold much blood. By the activity of the layers of muscle fibres they can and do help to propel the blood through the capillary vessels, for the large amount of fluid at so great a distance from the central pumping station which we call the heart might otherwise be moved with difficulty. It is not an exaggeration of the facts in the case to say that the functional value of these vessels is fully as great as that of the vessels of the lungs, or the stomach, or the kidneys. Each set has its work to do, and the efficiency of the

body as a whole depends on the satisfactory manner in which each discharges its duties.

The simplest and most natural means to insure the health and activity of the skin is by the common-sense use of pure soap and water according to certain well-known rules. No help is needed from the many powders, creams, oils, and lotions which are sold in such great quantities. In most cases one does not know the composition of these articles. They may contain inert or harmful ingredients, while they frequently enough serve to clog up the skin, and in a variable degree diminish its efficiency. For very young babies a simple dusting powder may be used in the folds produced by the large amount of fat, since by this means the inevitable friction and the resulting local irritation are obviated or diminished. But even in this case, the mother should clearly understand that the powder has no reason for existence excepting to prevent local chafing; it is not meant to "strengthen the skin," to absorb urine, or to exert any influence upon the general condition of the child. If irritation of the skin occurs, especially about the buttocks, the cause usually lies in some internal disorder and cannot be cured by a powder.

All children should be bathed daily, and the

habit of bathing that is usually begun almost directly after birth should be continued through the whole of the little one's life. For the first six months the temperature of the water may be about 100° F. The bath may be given about nine or half after nine o'clock in the morning, and should come immediately before rather than immediately after a nursing. The general statement holds good that the longer the interval between a bath and the preceding meal, the smaller is the possibility of unfavorably influencing the digestion of food; for it is well known that the stomach when it receives food draws a large quantity of blood from the surface into its vessels, and the bath, by dilating these superficial arterioles, defeats the very condition upon which the integrity of digestion depends. Therefore, in infancy the bath may be given an hour and a half after the nursing, and in later life about two hours and a half after the last meal. Before the baby is put into the water one must be sure that there are no draughts in the room, that the windows are carefully closed, unless the weather is very warm, and for added safety that the screen protects the locality of the bath-tub from the direction of any possible exposure. In cool or cold weather the tub

should be placed in front of the fire, so that the wet skin may receive as little chilling as possible. The person who bathes the child should wear a large apron, made preferably of some soft, thick material, one of the best of which is Turkish toweling. This should not interfere with the use of a large Turkish towel with which to dry the baby; this towel must be thoroughly clean and warm before being used, and should not be employed for more than two successive days without being washed. There should be enough water in the tub to cover the baby's chest, and as the little one reclines in the tub the attendant's left hand should support his back, her forearm should hold up his head, while her right hand does the washing. As soon as the child is immersed, his head may be dampened with water that is slightly cooler than the water which surrounds his body. A pure, unscented white soap should be used rather than the expensive fancy toilet soaps, which are in many ways undesirable. The washing may be done with the bare hand or with a fine sponge, and should start at the face and proceed to the feet. The eyelids should be carefully cleansed and all secretions removed from the corners and the eyelashes; the ears may

be thoroughly washed, but without sticking any pointed object into their canal; the mouth may be washed with a fine piece of linen and a solution of boric acid; especial attention must be given to all folds, creases, the buttocks, and wherever two skin surfaces touch each other. In little girls the two outer lips of the vulva should be separated and cleansed, and in little boys the foreskin of the penis should be drawn back twice or thrice in a week, and the parts thoroughly cleansed of any trace of urine or smegma. As soon as the washing is completed, the child should be rinsed off with fresh water that is slightly cooler than that of the bath. He may then be rolled up in the towel and rubbed with the hand. As soon as he is well dried, he is to be stripped once more and thoroughly rubbed with the bare hand; if there is any necessity for using alcohol in these frictions, the family physician will give the order. The buttocks and opposing surfaces may then be powdered, the clothing adjusted as quickly as is convenient, and the child snugly placed in his crib. He is now ready for his meal, after which, if he is in good health, he will sleep so sweetly, look so dainty and rosy, and awake so refreshed, that the

operation of bathing must necessarily be regarded as a joy.

During the rest of the day, some additional, but partial, washings are needed. After each feeding the mouth may be lightly cleansed with a fine cloth and a solution of boric acid or borax; and with the removal of each diaper the buttocks should be carefully washed, rinsed, dried, and powdered. Again at evening, before the child is put to sleep for the night the face, buttocks, and creases of the body may be lightly sponged and thoroughly dried. These are the general rules that govern an infant's care for the greater part of the first year; but in summer a little more attention is needed. Nothing afflicts and depresses a baby more surely than intense heat and humidity, in some cases to such an extent as to be a clearly understood cause of weakness, loss of strength and appetite, and even of active disease. To guard against these contingencies we may use two, three, or even four sponge baths in the course of a hot day; and in a close and heavy night, when even strong adults are unable to sleep, we can soothe and put the tormented baby into a quiet slumber by a liberal use of lukewarm water. The common fear that more than one

bath per day is weakening should be regarded as idle and superstitious; in most cases where an error is made it is more apt to be on the side of too little rather than too much washing.

From the second year the temperature of the daily bath may be somewhat reduced; the child will then be able to enjoy water of 85° or 80° F. instead of 100° or 95°. The bath must continue to be given in the morning, but instead of waiting until half after nine o'clock it may, if the mother wishes, be given on arising. The main difference is one of heat, for if the weather is at all cool most houses are too chilly to bathe an infant early in the morning When the bath is completed, the child's skin may be rubbed more vigorously than one may do with the younger infants. For this purpose the mother may use the bare hand or a Turkish towel that is not too harsh. The friction should be long enough and brisk enough to cause the skin to react in a thorough manner; the surface should be in a fine blush, should feel warm and full of life, and the little one ought to be lively and happy. Since at this time of life the bladder and rectum should be under fairly good if not perfect control, there will be less necessity for repeated washings during the day. In the evening,

however, before the baby is put to bed, he should receive the light sponge bath in order that all the creases and folds of the skin may be thoroughly sweet and clean. Likewise, at this stage of development, when in most cases the teeth are steadily making their appearance, the mother should begin the use of the tooth-brush. This brush must, of course, be very soft, and in using it one must have a light touch; and so long as these requirements are observed there is a full justification for thus cleansing the teeth. In most cases the tooth-brush is not used until a considerably later period. But this is not necessary or rational; a single tooth has the same right to the benefit of cleanliness that ten have, and the same arguments are applicable to the one as to the many. The mother must, however, remember that the mucous membrane of the gums is exceedingly delicate, and cannot well endure violent rubbing. A bland powder, such as precipitated chalk, may be used, and may be applied morning and night.

At three and a half years of age the temperature of the bath may be reduced to 70° F., and then by easy stages to 65° or 60°. The friction following it should continue to be satis-

factory in both duration and force, although the length of time spent in the water need not be at all long. In fact, as soon as we begin to make the water cool, the duration of exposure should be correspondingly short. There may, therefore, be a need of one or two hot baths per week, which are most conveniently given in the evening. It is undesirable to give them after the evening meal, because the child would have to remain awake too late in order to allow a sufficient interval to elapse between the meal and the bath. The best plan is to bathe him directly before supper, then to put him to bed, where he may be fed with safety and comfort. He will immediately fall into the deep and unruffled sleep of childhood, which will be made all the sweeter on account of his clear and active skin and his satisfied appetite.

It is a good plan to begin with children of about four or four and a half years of age the practice of cool effusions or douche baths. The beginning should always be made in the late spring or early summer, when the warm air makes the impact of the water both bearable and welcome; but when once begun it should be continued through the whole year, being intermitted only in the event of sickness. To

prepare this bath one should begin by allowing about ten inches of warm water to run into the tub, the object of which is to keep the child's feet thoroughly warm. Then water directly from the faucet may rapidly be thrown over him. This may be done in two or three different ways. The water may be allowed to run over him from an overhead douche, it may be thrown over him from two or three full pitchers, or it may be sprinkled through a rubber tube, to the end of which a douche nozzle is attached. A good variation of the last method consists in using a large sprinkling-pot. The use of the pitchers has much to recommend it: the temperature of the water is easily regulated, the force of the impact is likewise controlled, and the time consumed by it is exceedingly small. The douching need consume no more than a minute or two, but the final friction may cover from five to ten minutes. If, after being dressed, the child is warm, rosy, and comfortable, the bath is doing good; if he looks blue, cold, depressed, and is shivering, he is not being helped, but rather is suffering from too long an exposure or too low a degree of temperature. It is often surprising to see how quickly a child of no more than six years will become

used to this treatment, and how readily he will welcome the use of cold water even when the weather is cold.

Yet another method that has given satisfaction to many mothers is the familiar tub-bath, which is commonly used in England. The water is drawn into the tub at least two hours or even in the evening before it is to be used. During this period it assumes the temperature of the room, and therefore gives very little shock at all, excepting in a very cold room. Under the latter circumstances the duration of the bath is momentary, and immediate and brisk friction is needed to insure a good reaction. If this tubbing is selected to be the daily habit, there will be a necessity for one or two hot baths per week at evening to insure the thorough cleanliness of the skin. Into either the hot or the cold bath one may dissolve sea salt, according to one's fancy or belief in its virtues. This belief is widespread, and is held by many physicians as well as laymen. Its physiological basis is not easy to recognize, since it certainly does not inhere in any absorption of the salt through the skin. Such absorption is exceedingly difficult and can be accomplished only under exceptionally favorable circumstances. If this

were not true, we should receive the characteristic effects of all the various substances, both harmful and harmless, by which we are constantly surrounded. The cook, in the course of preparing a single dinner, comes into contact with various articles which, if they were directly absorbed through the skin, would have a marked effect upon her physical condition. Thus, she may handle acetic acid in vinegar and hydrochloric or sulphuric acid in cleaning fluids; the alkaline salts of soda or the neutral common table salt; bland and soothing starches or sharp and irritating condiments and spices; clean, sterile water, and bacteria-laden fruits, meats, and cheese. Nevertheless, as every one knows, she is not at all influenced, simply because of the impermeable barrier of her skin, that valuable excretory, but not assimilative organ. In the same way the painter, the dyer, the chemist, and a host of other workers who are bound to come in contact with drugs and chemicals, are efficiently protected.

Thus, one can easily see, without going into the technicalities of physiology, how the beneficial effect of artificial salt baths is not founded upon a question of absorption. Most of all it is rational to suppose that if such absorption is

necessary, it would be an easy matter to administer these salts internally. Some observers have thought that the salty solution, although not absorbed, acted as a local stimulant and caused the skin to act more briskly than it otherwise would. This theory is at best of doubtful value. In all likelihood the chief value of the procedure lies in the greater care, thoroughness, and regularity of the bath and all its accessories which the directions of the family physician or the special condition of the child necessitate. Doubtless, if the same care were exercised, even without the addition of salt to the water, equally good results could be obtained.

This question is quite different from that of bathing in the salt water of the ocean; here the exercise in the open air, the inevitable struggle with the moving water, the playing in the sand, the sense of freedom, the exhilaration, and the buoyancy of mind as well as body that sea bathing gives, have the possibility of benefiting the child in quite a different way from what the ordinary bath at home can do. The difference is analogous to that between exercising with chest weights at home or playing a game of base-ball or foot-ball in a field; the first may give strength of muscle, and thus lead to greater

functional activity of the whole body; but the second gives both health and strength in a more direct and inevitable manner. Bathing at home is not only desirable, but also necessary; bathing in the sea is, in addition, a tonic for mind and body. There is no reason why a child should not partake of its benefits in the same way that an adult does. The one precaution which the mother should observe is the possibility of a rapid chilling and a consequent general depression. A child of five years of age may safely be taken into the water, but as soon as his lips and finger-tips begin to turn blue and his teeth begin to chatter, he must be removed, rubbed briskly, and well dried and warmed. Besides the mere act of bathing he should be allowed to play about in the sand, before he takes his dip, as long as he wishes. Let him dig, build houses, make mud pies, and get himself as dirty as his heart desires; let him have unrestrained liberty, encourage him to use whatever investigating and constructive ability he may possess in the mobile medium of the sand; let him be warmed in spirit as well as in body, and he will find a different sort of health and strength from what he obtains at home, and at the same time will lay up

memories of enjoyment. A child from his earliest age should be made familiar with water, should be taught to regard the bath as a treat and a pleasure, should be accustomed to resort to it just as readily when exhausted as when dirty. Doubtless, it would not be far from the rigid truth to say that the civilization of a people is measured by the amount of water which they use for their personal needs. And it is comforting to know that one can scarcely use too much water. This rule should be impressed upon every youthful mind until its workings may become manifest in the unconscious impulses that go to make what we call second nature.

CHAPTER VI

SLEEP

THE main business of a young child, outside of eating, is sleeping; one might state the matter somewhat differently and say that the principal necessities of a child are absorbing nourishment and obtaining rest. In health the faculty of the latter is, to a certain extent, self-regulating: a normal child may easily overeat; he practically never oversleeps. Of the two functions in question, the second is sometimes regarded as the more important; for he can go without food for a longer time and with less exhaustion than he can spare sleep. And reasoning in this way, if one wishes to compare the respective values of eating and sleeping, one would have to decide that sleeping is the more vital. This principle of sleep, or rest, may be found in the normal action of every part of the body. Thus, for example, the heart, which seems to be working ceaselessly, has a well-known period of rest, amounting to about

one-half second between each relaxation and contraction of its muscular tissue. One would be quite exact in saying that during this period the heart *sleeps*. The muscles of breathing have a similar period of rest, that amounts to about two seconds, during which they also may rightly be said to sleep. If one cares to push one's observations yet further, one will clearly recognize that the same rule may be noticed in regard to all muscular action, and, indeed, all the various functions of the body. There *must* be a definite period of rest for each part of the organism, which will be all the more profitable if the laws concerning it are clearly understood and logically carried out.

One of the first things to understand is that any part of the body at rest demands less stimulation and a smaller blood supply than when it is working. As an example, we all know that if we exercise an arm in an active way, it immediately feels wider awake than it did before, it obtains a sensation of warmth, it is even somewhat larger in circumference than it otherwise would be. The reasons for these changes are the active wear and tear, the rapid tissue-change, and the increased amount of blood in the part; and when the period of exercise has

passed and the member is at rest, fatigue takes the place of activity, the added warmth and increased size fade away as the amount of blood is gradually equalized throughout the body. A similar set of facts is true for the stomach; when it obtains food, the pale hue of its mucous membrane becomes both deeper and brighter, the tissue may be seen to be heavier and more turgid than it formerly was, and a keen activity takes the place of somnolence. But as soon as the work is done, the conditions of activity have no longer any reason for existence and the organ reverts to a state of sleep. The brain has a strictly analogous group of circumstances: during the waking hours, and sometimes when sleep is imperfect, it is working with more or less industry, it draws to itself a large amount of blood to carry on its functions, it actually increases in size, and assumes a brighter hue than it had during rest. This continues until fatigue sets in, or until the person falls asleep. Then a temporary anæmia results, the color of the brain becomes lighter, its increase in size passes away, and its chemical changes fall to the minimum.

These facts give us a clear idea of the conditions which we should provide for the sleep-

ing child: there should have been a reasonable amount of active exercise, sufficient to fatigue, but not exhaust him; during the period immediately before retiring he should have undergone no great excitement, for unusual commotion would naturally tend to produce cerebral congestion rather than anæmia; his sleeping room should be dark and comfortably cool, since such an environment leads to mental calm and opposes active disturbance; the air should be clean and pure, in order to allow a satisfactory oxygenation of the blood; the body and clothes must be fresh and clean, for these factors help the processes of excretion, and, negatively, are fully as important as proper breathing; the sleeping time should come within a reasonably short period after the last meal, for where the stomach contains and is actively digesting food it draws into its blood-vessels a comparatively large amount of blood, thus creating some degree of anæmia of the brain. The time-honored aphorism which advises exercise after a meal has less truth than is commonly supposed; on the contrary, the best thing that one can do is to rest. And the heavier the meal, the greater is the necessity for resting. Even if one knew nothing about the physiology

of the question, one's experience in feeling drowsy after having eaten well, and the common knowledge that animals regularly wish to sleep after eating any substantial amount, would inevitably direct one's thoughts in the right direction. The same course of reasoning that forbids bathing directly after eating counsels sleeping after eating.

The younger the child, the more easily does his brain become fatigued, and the greater is his need for rest. This fact every one knows from practical experience; and thus we know, both theoretically and practically, that during the first three months of life he should spend nine-tenths of the whole day in sleep; from three to six months he will be awake for six or seven hours; in the next quarter year he will usually sleep about one hour less, and when he is in the second year, twelve hours at night and about two hours in the day will satisfy his needs. The practice of taking a nap after the noon hour is a thoroughly good one, and should be continued as long as the child's activities and duties permit. This will generally be not longer than his seventh year, although this age creates no natural limit to the practice. On the contrary, the unceasing activity of early

childhood makes some such rest highly desirable, and the result will necessarily be a stronger body, a better disposition, and firmer nerves than otherwise. The fact of taking this nap should not in any way interfere with the rule of early retiring: children of one and a half or two years should regularly go to bed at half after six, or, at the latest, at seven o'clock; those of three, four, and five years may remain up an additional half-hour. Thereafter the increase over this time must be made very slowly, so that at thirteen or fourteen years of age the hour of retiring is no later than half after eight o'clock. There is absolutely no justification for the long hours which growing children are so commonly allowed to have, most of all in large cities. Such children are very apt to show some manifestation of precocity which is commonly destined to assume a vicious or, at best, an unfortunate aspect.

In regard to the sleeping garments, the same general rules which were suggested in describing an infant's outfit hold good. In summer they may be made of muslin, cambric, and nainsook; in winter such material may be replaced by some of the various forms of pure wool, of mixtures of wool and silk, or of a fine brand of

Canton flannel. They must be large enough to do away with constricting effects, they are preferably closed with tapes, and should never be fastened with pins. The skirts may extend to the feet, or one or two inches below them; but the use of the really long skirts is to be deprecated. If the child is weak or has so poor a circulation that his feet are often cold, one can contribute to his comfort and well-being by putting a hot water-bottle at the soles of his feet. Such children are the ones that cause concern on account of their liability to throw off the covers and thus expose themselves. This can easily be prevented by sewing tapes to the corners of the blankets, which are thus to be fastened to the posts or the railings of the bed. For children of two and a half years or more the nightgown may give way to the union suit, the legs of which are lengthened into the form of stockings. These suits may be made of wool or Canton flannel, and there should be a large enough supply to render unnecessary too frequent washings. These older children, as their younger brothers, may have the lightest fabrics for their summer garments. A child thus clothed, lying on a hair mattress, very lightly covered with a sheet in hot weather,

and with woollen blankets in the winter, in a cool, dark, quiet, and well-ventilated room, should sleep a sweet and refreshing sleep.

There are certain objectionable practices in common use that are important enough to merit a special mention. One of these is the habit of rocking and singing a child to sleep. This form of infantile tyranny is quite without reason, it destroys domestic discipline, makes the infant captious and exacting, and is undoubtedly burdensome to the mother. A healthy baby of good habits will go to sleep if he is merely placed in his crib at the proper time and with the proper environment. If he does not fall asleep readily, the cause lies either in bad training or in bad health. The first is to be remedied by the mother, and should be as certainly done as she would live up to any other important principle of conduct; the second, if it certainly exists, should be adequately treated by a competent medical man. At all events, the child, the mother, and the household at large must understand the circumstances of the case and the necessity of self-restraint and firmness. Especially must the mother be on her guard against this abuse after an acute sickness, for then the ordinary rules of feeding may

have necessarily been put aside, the child may be irritable and tormented by the so-called "false hunger" of invalids, and within a short time the bad habit is formed. But as soon as convalescence sets in, the child ought to be subjected once more to his salutary discipline, to which he will submit if he sees sufficient firmness of purpose in his parents and attendants.

Another related abuse is the employment of an empty rubber nipple or a "sugar teat" to keep the baby quiet by allowing him to suck on it; some women go so far as to allow sucking on one of their fingers, on a coin which is held by a string, or a piece of ivory, or any other convenient material. Thus to take advantage of the infant's sucking reflex is not nearly so clever as it may appear at first glance. In all but the very youngest it produces an excessive quantity of saliva; it is a common cause of mucous erosions; it causes the bad habit of depending upon continuous sucking for putting the child asleep, or amusing him, or even for keeping him quiet. One of its worst faults is the fact that its lack of surgical cleanliness must and often does result in sickness, for by this means various forms of germ-life are put into the baby's mouth. The "comforter" may

have dropped in the bed, on a chair, or on the floor, and as soon as the child cries it is immediately put back in his mouth without even the preliminary of washing. Finally, it leads to the habit of thumb sucking and the attendant evils.

Some families, especially those whose first habits of housekeeping have been acquired in Europe, use feather-beds as the main covering for their children in the winter nights. It is unnecessary to mention more than the uneven distribution of the feathers, and therefore of the heat, and the impossibility of thoroughly airing the feathers to show how unadvisable this custom is. Better protection can more easily be obtained by light but comfortable blankets, the warmth of which is spread evenly over the whole bed; such covering can easily be increased or decreased, it is easily manipulated, and easily kept clean. A further objection should be made to the habit of sleeping in one position during the whole night; from the first day of life the child should be placed on the side, and from time to time should be changed from one side to the other. It is unnecessary and undesirable to produce a one-sided pressure upon the head, most of all in infancy, when the bones are so

soft as to be moulded by a continued pressure upon one spot. Likewise, the custom of maintaining a light in the bedroom during the whole night should be abolished; for it tends to make sleep less sound, and develops a fear of darkness. Of the two, the second danger is to be the more avoided, since by such factors the whole character may be injuriously affected. Finally, the mother should so arrange the blankets that the child's hands are always outside of them; if this custom is cultivated in early childhood, it may in later years save the child from falling into certain bad habits, which will be mentioned in a later chapter.

If these suggestions are carried out, the children who do not rest quietly will be few. Nevertheless, there will always be some complaints on this score, so that it is desirable to say a few words concerning it. In young children the causes which lead to insomnia are sickness and pain, over-excitement and nervousness, and, finally, bad feeding. The factors of sickness and pain should be so easily recognized and understood that no mention need be made of them. Great excitement and nervousness are legitimate causes which, although common enough, have no good reason for existence; for

the life of a baby should be as monotonous as possible, it should be protected from all commotion, and should in all ways be well shielded from surprises. Such a child ought to have no part in domestic celebrations, rejoicings, or occasions of emotional disturbance. Since he is too young to know the import of events, he need not participate in them. A disregard for these suggestions can easily bring about so perturbed a state of mind and body that the necessary conditions of sleep are not easily obtained. But the most common cause of disturbed sleep is some form of gastric or intestinal derangement which, in the majority of cases, follows improper feeding. The manner of occurrence is simple enough for any one to understand: certain articles of food are taken into the stomach, but, on account of their indigestibility, or weakness and fatigue of the stomach, they are not fully changed nor properly prepared for absorption. As the result, products of partial digestion are formed, the gastric contents decompose and give rise to gases and matters of fermentation and putrefaction. These are absorbed in various degrees, and act as the means of a low form of poisoning. At the same time, the working of the body is sufficiently impeded to prevent

the draining off of the waste matter. The situation, finally, amounts to a lack of nourishment even if the food be plentiful, combined with the formation and retention in the system of toxic agents. Some of the symptoms of this condition are greater or less pain, a deficient or capricious appetite, restlessness and nervous irritability, congestion of one or more parts, mental depression and uneasiness. In consequence of these abnormalities, the child is plainly unable to be quiet or to sleep; every member of his body may be tingling with its nervous tension, his mind instead of being calm and peaceful is harried by frightful images, unnatural and grotesque impressions, and a lowering of its ordinary tone, which in an adult would be translated as black despair. He, of course, is unable to sleep; or, if he should happen to doze, his sleep is no more than a fitful, unrefreshing, unsatisfactory lack of consciousness from which he is apt suddenly to start in terror.

Such a condition is one of the commonest causes of nightmare. The pitiable spectacle of a child's awaking from a seemingly sound sleep with cries of abject fear is enough to touch a callous heart. There is no doubt that the little

one suffers as acutely as if the fancied horrors were real; and that in itself would be enough to call for a wise regulation of his body and mind, which would have the end in view of obliterating his suffering. But as a matter of fact, very much more than suffering is thus entailed. These pathological effects produce decidedly harmful impressions on his mind, they rob him of his mental freedom and bravery, they may render him self-conscious, effeminate, deceitful, and, possibly, degenerate. If he suffers from night-terrors of a different origin, such as central nervous disturbances, or eye-strain, the results may be similar in kind, although frequently less in degree. But under all circumstances and whatever their origin may be, they should never be lightly passed over. They are worthy of the most serious attention.

But even if markedly pathological effects are not manifested, there may be many conditions where sleep is not perfect or where all of the brain is not at rest. The ordinary phenomenon of falling asleep means no more than that the major part of the brain is at rest. One or more areas may be more or less awake, and partially prepared to show their characteristic activity. The various functions of the body are controlled

by definite centres in the nervous system of brain and spinal cord, in the same way that the various mental concepts have their respective localities in the brain. Any one of these different areas, or a group of them, may be partly awake, may become stimulated even though the child is asleep. The result of such activity expresses itself in what we call dreams. And in so far as the areas in question are fully awake and stimulated, just so far is the consequent dream vivid. And the wandering, disconnected, and irrational character of dreams is due to the fact that the will and the reason are, under such conditions, in less than their usual state of control — the state that is known by the name of consciousness. And since the mental processes of young children are under less logical restraint than those of adults, the dreams of children seem less unreal, partake more of the nature of actuality than those of mature persons do. Thus, one can easily understand that dreams have a real significance, that they mean imperfect sleep, and that if the physician could have a sufficiently profound knowledge of localization of cerebral action, he would be able on hearing the recital of the dream to describe the part of the brain which was involved, and even

the extent of its distribution. Perfect sleep is dreamless, unruffled, sweetly restful; and if a child does not sleep in this manner, he has a right to demand — or, stated differently, the responsibility of the parents should stimulate them to seek — a searching inquiry into the facts of the case and an attempt to right whatever abnormal conditions may be found.

A sharply differentiated form of this partial awakening is familiar to everybody under the name of somnambulism. Here the brain is able to stimulate such a train of reflex action in the nervous system as is essential for progression, and at the same time the sense of muscular exertion, which is doubtless situated in the cerebellum, is doubtless awake. Simultaneously that part of the brain whose function is to recognize impressions is not sufficiently awake to collate and know what is taking place. There is plainly a wide gap between the physical experience of walking through rooms, down stairways, and out into the street, on the one hand, and, on the other, the orderly placing of memories, ideas, and conscious reasoning connected with them that characterizes such actions in times of lucid wakefulness. And when once the philosophy of these phenomena is clearly

understood, there is always the possibility of sufficiently perfecting the ordinary action of the body so that it may work clearly, uninterruptedly, and peacefully. Dreams and somnambulism are not the wild and wayward fancies that they are so commonly supposed to be; on the contrary, they are as rigid and inevitable as any other manifestation of natural forces.

The lesson of the whole matter is that one should not be satisfied with a child's sleep unless it is quiet, serene, and refreshing. Any interruption which occurs regularly or frequently should be investigated until the cause has been found; and then one should not be satisfied until the abnormal condition has been removed. For example, a child may snore, or sleep with an open mouth, or pick the nose, or talk incoherently, or throw himself about, or be tormented by depressing dreams, or awake with a feeling of exhaustion. Such things are common, and always have an unfavorable significance. The cause may be adenoid vegetations, or an abnormal and devious nasal septum, or marked nervous irritability, or disordered digestion. But no matter what it is, it should be patiently sought for and finally corrected. Until that has been done, the little one cannot

obtain the rest and recuperation which he needs and must have. And negligence in this respect is more than mere carelessness ; for it means a deprivation of normal nutrition that may cause a life-long want of energy or strength.

CHAPTER VII

EXERCISE

THE subject of exercise, especially for children, is one that everybody believes in, but few follow out in a systematic fashion. Everybody knows that it is not only advisable, but necessary; and when it is neglected, the cause is in part carelessness and in part a halting appreciation of how widespread its influences are. Usually parents believe that exercise is a good enough thing, but that there is no special need for directing it, and that, in addition, children will regulate the matter for themselves. Besides all this, they commonly believe that the best way to dispose of a child's time is to fill the day as full as possible with the various duties which will adequately claim his attention and "keep him quiet," and trust to his ingenuity and natural lawlessness to assert the normal activity between times which all young animals inevitably possess. This statement may seem somewhat

crude and harsh: but if parents will look at the matter frankly, they will recognize that it states the matter with a reasonable amount of truth. In most households there is little or no intelligent attention paid to this subject, and in some the whole subject is consciously put aside because it seems too closely connected with what is coarse, gross, or violent. As a matter of fact, such a judgment is very far from the truth; it reverses the true relations of facts, and tends to dwarf one of the best aids which we possess for the development of a nicely balanced mental as well as physical equilibrium.

We must clearly understand that every part of the body is susceptible of steadily improving activity. This is usually well understood in regard to the muscles; but it is equally applicable to the bones, the nerves, and the special organs. One is very apt to think of the bony skeleton as being the foundation and permanent framework of the softer tissues; but in reality the contrary is the fact. For by the strain and pull of the growing muscles the bones are pulled in one way and another according to the line of maximum force. During the early years, and until they have become consolidated by advancing development, they are susceptible of an in-

definite amount of change. The effect upon the nerves is equally great; indeed, this influence cannot easily be overestimated. In many children these structures are exceedingly unstable, are subject to many variations in the way of over-excitement and a one-sided irritability. These effects may be evident at any age: the babe in the cradle may show them by restlessness, nervously disturbed sleep, nervously capricious appetite, and a deficient repose of disposition which cannot be attributed to a discernible organic disorder of the body. In older children the condition may show itself by bad temper, a poor adaptability to normal rules of conduct and self-restraint, and the development of abnormal characteristics. In some cases this may take the form of viciousness, in others, that of an uneven precocity or backwardness. While it is true that such conditions exist at times congenitally, and are thus very hard to remove, it is likewise true that they may follow a congested, an impoverished, or an irritated state of the nervous system.

Such a tendency is easily created by the necessities and the inevitable conditions of civilized life, especially in large cities. It is not hard to understand why this should be so,

if we take into account the noise, the hurry, the forced restraint of school and drawing-room, the imperfect methods of ventilation and heating, and the premature experiences that so frequently are the rule rather than the exception among a large proportion of growing children. When, in addition to these factors, the child's exercise is limited or badly arranged, the necessary metabolism or tissue-change must be curtailed or deflected from its rightful course, and the consequent development must as surely be more or less unnatural. The same train of reasoning is as applicable to the special senses as to the nerves and the muscular tissues. The sight, taste, hearing, touch, and smell are all capable of a gradual, healthy, and profitable unfolding; or they may become distorted, blunted, overexcited, or abnormal. And in order to help along the favorable and discourage the unfavorable course, a wise regulation of the daily exercise is of great help. Viewed in this way, exercise is more than a means to increase strength; it should rather be regarded as a necessity for the growth of normal activity.

In infancy the sorts of possible exercises are limited, but, nevertheless, are adequate. The muscles and nerves are so weak and the control

by means of the will is so rudimentary that more than this limited amount could not be endured. Nature has evidently taken this fact into account when she provided for the constant activity of a healthy baby, which takes the form of seemingly purposeless and random movements of hands and arms and body. Physiologists translate this by saying that the centres of inhibition, which restrain and control muscular movements, are, in young babies, poorly developed or undeveloped; moreover, this development comes somewhat slowly and only in proportion to the growth of the whole body and its functions.[1] The inevitable result is that whenever the little one is awake he is unconsciously tossing his arms and kicking his legs about in order to strengthen their budding power. This shows a reason why his clothes should not be too long, heavy, and binding, why he should not be pinned and swathed up like a mummy. The little limbs must have every opportunity of unrestrained freedom for preparation against the time when he is able to put them to well-directed use. This exercise is increased by the unavoidable motion involved

[1] See "The Development of the Child," by Nathan Oppenheim. The Macmillan Company, 1898.

in wheeling him in his carriage and carrying him about in one's arms. While such motion may be gentle, it is, nevertheless, important, and compares closely to that which an invalid obtains when he is taken out driving or in a roller chair. The additional fact that this exercise is taken in the open air increases its value very much. Finally, the rubbing which he receives after his bath is of no inconsiderable importance, and fills out the sum of his exercise. While these things are of salient importance for him, one should guard against exaggerations of them. As an instance, the habit of tossing a baby into the air, or throwing him violently about for the purpose of amusing him, is a case in point. The resulting disturbance may at any time be harmful, causing vomiting, diarrhœa, and lack of nervous equilibrium.

As soon as the child passes the age of infancy, his exercise gradually becomes more varied and prolonged. While he is less than three years of age, it naturally consists of no more than being taken to walk, or being wheeled in his go-cart. And these should be done as much as possible in the air. In fact, the more of his time he spends in the air, the greater will be the likelihood of ultimate robustness. Out-

side of the time devoted to the necessary factors of care, such as bathing, eating, dressing, and sleeping, the whole day should be spent out of doors. Thoroughly bad weather will naturally create an exception to this rule, although cold or cloudy days are too easily interpreted as being stay-at-home times. Heavy rains, winds, and snow-storms, or intense heat are the only reason for shutting children within four walls. And with increasing age the amount of time spent at home becomes progressively smaller. The three-years-old child may dig in the sand or the dirt, may make little caves and nests and the well-beloved mud pies. The mother should have no fear of dirt; she may allow him so to cover himself from head to feet, if he will. As long as he is properly dressed in stout, coarse slips, or even overalls, he is easily and rapidly cleaned when meal-time comes.

At the age of five years the permissible range becomes much wider. If he is forced to stop indoors, light calisthenics and dumb-bell exercises may wisely be begun. If these are conducted with the accompaniment of a story, simple music, or concerted action, they become amusing as well as beneficial. Only the simplest motions should be employed. They must

not be continued for too long a time, and under no circumstances ought they be allowed to involve strain. At this period the child may take longer walks in the open, and his carriage and manner of walking should, if necessary, be corrected. The habit of standing erect, walking with the toes turned out, and allowing the hands to hang easily, is formed more easily at this age than later on. The locality of the walks should, whenever possible, be selected in or toward the country or a park; and an earnest attempt should be made to familiarize the child with facts of nature. It is fully as easy to acquaint him with these facts as with those of the streets. Within a very short time this growing child may be taught to swim. In most cases a boy or girl of six years will learn the art more easily and quickly than those of fifteen; the younger child, if he has the advantage of example, is often more confident and more trustful than the older, and at the same time he is young enough to have retained some of the imitative faculty of the youthful animal. Swimming, if kept within reasonable bounds, is one of the best exercises that a child can have. It need not involve over-exertion, it brings all the muscles of the body into play, and the fatigue which it

brings on may immediately be counteracted at any time by floating. While the child is in the process of learning, he should be taught to dive, to swim on his back, to swim when partly and wholly clothed, and to help a drowning person. At the same time he may be instructed how to support himself if he is seized with a cramp; but he must always be warned against remaining a long time in the water, for this is one of the commonest causes of such an accident. In most cases fifteen minutes are as long as he need remain in the water, while in the beginning of the season a shorter time is advisable.

The common use of the bicycle has made this form of exercise familiar to young boys and girls. Children of six, seven, and eight years now freely indulge in it, and usually with benefit. There are a few suggestions in regard to its employment that may profitably be kept in mind. In the first place, a bicycle ride should not be too long in extent nor too rapid in rate. I have often enough seen comparatively young children ride ten, fifteen, or more miles at a stretch at the rate of ten or more miles an hour; and in a number of cases I have treated them for abnormal conditions which thereby resulted. Bicycling, when thus carried

to excess, should be regarded as violent exertion, and must not be participated in by any persons except those who are fitted, by strength and training, to withstand the strain. Rapid riding is apt to produce a tired condition of the heart muscle, with the attendant weakening of the circulation and liability to respiratory disorders. Another item is the height of the saddle and the plane of elevation in which it rests. When the child sits in the saddle with his legs extended, the lower pedal should touch the sole of the corresponding foot; and the pedal should support the ball rather than the instep of the foot. Very often one may have considerable trouble in adjusting the saddle, and the trouble comes, for the most part, from the irritation which the peak, or pommel, causes. This part, on account of the pressure which it exerts on the perineum, is the main objection to the ordinary commercial article, and should be abolished. If it is tipped up — a favorite position for many children — the weight of the body rests upon the perineum, and may injure some of the near-by delicate structures. If it is tipped down, the child slides forward, and must use part of his strength in supporting instead of propelling himself. The best position, there-

fore, is when the saddle is quite level, and not too far back. If the saddle is thus arranged, if the bicycle is not too heavy, and if the handle-bar is high enough to make the child sit up fairly straight, the exercise obtained by this means will almost always be beneficial to a healthy boy or girl.

An exercise that is usually recommended for its social and æsthetic, rather than health-giving reasons, is dancing. Nevertheless, if moderately practised, it may benefit the body in a variety of ways. Although the lower part of the body is the one most employed, nevertheless the whole organism is, to some extent, brought into play; the finer movements and those used in maintaining an exact balance are especially brought out, so that while the circulation is being stimulated, and a healthy glow is made to pervade the body, the child's gracefulness and lightness of movement are being developed. The fact that this exercise is generally conducted under circumstances of festivity and sociability gives the added advantage of keen enjoyment to it, and thus materially promotes its value. Besides all this, it may be enjoyed by both boys and girls, and therefore is especially to be commended. There can be no

greater mistake than the belief that dancing is a mere accomplishment whose purpose is no more than decorative. It is all this, but much more besides. Gentle exercise has its uses as well as that which is violent; and especially for those children who are endowed with a large amount of animal spirits it may be exceedingly valuable. The necessary formality and courtesy which boys are forced by this exercise to show to their sisters and girl friends has an influence that is all for good.

This fact brings to mind the limitations under which girls usually are placed in the attempt to gain a sufficient degree of strength and grace. At the same time, their need of vigorous exercise is fully as great as that of their brothers. The fashion of weak and helpless women has passed away, and we shall be fortunate if it never returns. A girl deserves as serious a preparation for future work and life as a boy; and the fact that her work and life are to be different from his has no bearing upon the necessity for development. She can be fully as maidenly, sympathetic, and useful with a strong body as with a weak one; and in the favorable instead of the unfavorable condition she certainly will gain in health and strength,

self-confidence, and ability to discharge her future duties as wife and mother. When she takes her exercise she must be properly and fitly dressed. Her skirts should not be too many, too heavy, nor too tight. Her shoes should be large, strong, and heavy enough to give an efficient support to the feet and ankle; and the evil day when she is forced to wear corsets must be put off as long as possible. This article of dress is absolutely unnecessary for young girls whose physical development is such as to render constriction of the waist and support of the breasts superfluous. The evils that it may and very often does create are undoubted, and ought to be sufficient to impress a reasonable mind with their sufficiency. With abdominal and back muscles weakened, with abdominal and pelvic viscera squeezed and pushed out of place, a girl must inevitably be balked in her normal evolution and the attainment of her rightful growth. When the corset is replaced by a strong waist, without bones or stays, she is prepared to participate in many sports and exercises that are, for the most part, handed over to her brothers.

In selecting exercises for children of ten or more years, those should be preferred that

actively employ the mind as well as the body. For this reason fencing is highly desirable. It gives abundant movement, may be made as gentle or as violent as the capabilities of the person permit, and simultaneously develops the finer as well as the heavier movements, exercises the eye as well as the arm, and brings in the element of emulation. For somewhat similar reasons tennis is a fine game, although it must be played much more vigorously if the child aims to excel in it. Basket-ball is also a good game, and involves the very desirable factor of concerted action. This is a most useful element, for it develops a wholesome discipline, a salutary subordination to authority, a constant watchfulness to take advantage of opportunities. The so-called "team-play" of base-ball and foot-ball gives an undoubted value to those who play the game skilfully; and it is unfortunate that girls have not more amusements which tend to further such qualities. The two games mentioned are thoroughly commendable for boys who have the requisite strength and activity; but the spirit of strenuous striving must be brought out, and each player must be drilled to use determination and spirit, to work at every point in the game, to

struggle and fight against defeat. Such reasons of personal influence make the training that comes from sparring and wrestling an influence of much good. This influence stands for physical bravery, endurance, fearlessness, the careful estimating of an opponent's ability, as well as an increase of the body's strength and quickness. Such things are a real gain over the benefits which one derives from riding, driving, or even golf; although these sports have their value for the small number in the community whose wealth makes the item of cost unimportant.

But whatever games are played must be partaken of with the double object of the pleasure which they are able to give and the training of mind and body which they as surely provide. The parents should make the selection of these games and sports a matter of careful attention, they should participate in them (and thus obtain, in most cases, valuable training for themselves), and supervise them as carefully as they would select clothes to wear and books to read. When children of any age take their exercise, they should be properly dressed in strong, plain garments which they need not fear to soil or tear. Their sense of physical free-

dom must be unrestrained, and they should be encouraged to let loose all the physical energy that characterizes the young animal. When their time of exercise is over, they should bathe, change their clothes, and adopt the more controlled manner of their ordinary hours. A rapid sponge or shower bath, followed by a brisk rub for a few minutes will bring out the appearance and feeling of bounding health and content, the enjoyment of a vigorous appetite, and the repose of a sweet sleep.

In every home where children are there should be some substitute for a gymnasium; and whenever they are forced to stop indoors they should be encouraged to use whatever devices are at hand. Any room, whether it is an attic or bed room, nursery or play room, will serve our purpose. The only stationary fixture which we need is a pair of flying rings. If in addition there is a horizontal bar, a striking bag, or a set of parallel bars, or all of them, the opportunities for diversified exercises are much increased. Swinging clubs and dumb-bells are always easily obtained, and the use of them should be encouraged. All of these things are as valuable for girls as for boys, and both of them can profitably employ them at times when

they may not row, skate, or disport themselves in other ways in the open. By all means every child must be made to feel that his body is as worthy of attention as his mind, and that the pleasures which may thereby be attained are both laudable and dignified.

CHAPTER VIII

CLOTHING FROM THE TIME OF INFANCY

THERE is a fairly well-fixed rule which controls the materials and the fashion of an infant's clothes; tradition and experience have settled what this may be, and the variations from it are, as a rule, small and unintentional. But as the child grows older and stronger, mothers feel that they have a wider range of choice, and a smaller need to adhere to a fixed standard. Moreover, the differences between the rich and the poor are then more plainly evident than in the younger children, not only on account of the rapidity with which clothes are outgrown, but also because there are so many fabrics on the market from which clothes are made. The belief has grown that the most expensive garments are necessarily the most serviceable, the healthiest, and the best. Thus, indecision follows lack of information, and a certain amount of inconvenience, or even hardship, may be undertaken for the sake of a supposed

necessity to give a child certain costly kinds of garments.

For such reasons it may be advantageous to consider what the various fabrics are and what work they are meant to do. Their main function, outside of providing a decent covering for the body and furnishing decorative effects, is to afford protection against cold and heat; and the main part of the problem consists in regulating the amount of heat which is given off from the body in cold weather. The importance of this question may be estimated from the fact that more than 80% of the heat which is generated in the body is given off from the skin; and if additional inroads are made by badly selected clothing, the effects upon the health and vitality must necessarily be great. This dissipation of heat takes place through the well-known processes of radiation, conduction, and evaporation of moisture. Radiation acts mainly when the body comes in contact with cold objects, such as cold clothing, bedding, or furniture. Conduction is most active when the surrounding air, whether it is hot or cold, is in brisk motion. Both conduction and radiation accomplish their purpose most thoroughly when the wind is cold, harsh, and strong. Evaporation stands for the

volatilizing of the moisture that is given off on the body surface; in winter it amounts to very little, but in summer it may be considerable. The object sought for in wearing winter clothing is so to regulate the factors of radiation and conduction that the body maintains its normal and comfortable amount of heat; and of these two factors conduction is the really important one.

Common experience has demonstrated that wool is the best protection against cold, but the reason why it is efficient is not so well understood. There is much loose talk commonly heard about good conductors and poor conductors, that one fabric is "heating" and another "chilling." As a matter of plain fact there is very little difference between the organic constitution of the various fabrics as far as their power of conduction is concerned. Also, it is practically a matter of indifference whether the material is of animal origin, like wool or silk, or of vegetable origin, like cotton and linen. And whether the wool is one of the so-called "natural" or copyrighted articles, or the muslin is more or less finely bleached, is, for the most part a matter of indifference. The commonly heard argument that the "natural"

wools are necessarily better than other brands because they tend to copy the state of nature involves striking fallacies; in the first place, we do not in our ordinary matters of life seek to imitate the ways of nature: we want our food cooked, not raw, as animals take it; we want to sleep in comfortable houses, not in the open; we seek to be guided by reason, and not by instinct. Because wool comes from the sheep's back is no reason why it necessarily excels other fabrics as a means of protection. In fact, where the whole pelt is used, as in fur coats, much more warmth than is usual may be obtained by wearing the wool toward the body and the skin toward the weather.

The real difference between the various fabrics consists in the way they are woven. If the material in question is so made that it contains a fairly large amount of air between its fibres, it keeps out cold better than if it were tight and smooth; for still air is an excellent non-conductor, and under such circumstances it serves a useful and active purpose. Here is where the true advantage of wool may be seen: for it is so made that its fibres are loosely combined, the rough ends protrude more or less, and touch the skin in a multitude of fine points.

As a result, there are strata of still air between the body and the cold. For similar reasons it is wise to have successive layers of thin clothing rather than one very thick garment, even although the latter is equal in weight to or exceeds the weight of the combined suits. The method of dressing used by the Chinese is in this way highly to be commended, for they use the same kinds of garments in all seasons, but vary the number of them to suit the needs of the weather. If cotton, flax, and silk could be so woven as to present the same physical conditions as wool, they would also partake of similar excellences; if instead of being very smooth and tightly woven, they were rougher, looser, and possessed of more irregularities, their usefulness as clothing would be equally great. Indeed, imitations of wool, which attempt to give the physical peculiarities of their prototypes, have been, and are, giving much satisfaction. And people with sensitive and irritable skins derive both comfort and benefit from fabrics which are made wholly of cotton or of wool mixed with cotton or silk.

In addition to this advantage of physical conformation, wool has the fine characteristic of being able to absorb more moisture than cotton,

silk, or linen. It is capable of taking up more than its own weight of water without immediately losing its elasticity. Evaporation does not take place so readily from it as from the other fabrics mentioned, and, consequently, it is less liable when it is wet to chill the skin. On the other hand, woollen fabrics have a decided disadvantage in the way they react to washing and ironing. The action of washing and rubbing causes the long, curly fibres to break, become hard and rough, so that the whole garment is finally harsh, feltlike, and shrunken. While this can be in part avoided by care in washing, by the use of lukewarm or cool water in place of hot, and by waving the garment in the water instead of rubbing it, nevertheless, it is always more refractory in its conduct than cotton goods. The latter, on account of their lightness, their ease of manipulation, their smoothness, and the fact of conducting heat well, are the proper materials for summer garments. In the list of available fabrics for clothing, rubber cloth, oil cloths, oil silks, and mackintosh cloth should have no place. They prevent all beneficial movement of air, render evaporation impossible and create a chilled, clammy layer of moisture next to the body that

makes the probability of taking cold imminent. Finally, the comfort of the clothing can be modified to an appreciable extent by means of their color: for we know experimentally that certain colors take up more heat than others, and that this characteristic makes itself plainly felt in garments of different hues. Thus we know with certainty that black holds more than twice as much warmth as white, and that the intermediate points are held by yellow, green, red, and blue. The exact order would read as follows: —

White	Bright red
Light yellow	Dark green
Dark yellow	Pale blue
Pale green	Black

If we wish to summarize all these facts, we may say that winter clothing should be made of wool, or of mixtures of wool and cotton, or wool and silk that imitate the physical form of woollen fabrics; that they should be soft and downy rather than hard or feltlike; that they should be in thin, light layers rather than in one thick, heavy material; that they should not be too loose; and that their color should be red, dark green, blue, or black. In summer they should be made of cotton, muslin, or silk, should be in as few layers as possible, should be very loose,

and that their color should be white, yellow, or pale green. Rubber material should never be used for clothing, nor should that fabric known as stockinet find a place in a child's underclothes, or mackintosh in his overcoats. "Waterproofed" woollen goods have less objections to their use, for they admit of a moderate passage of air. In the future they will doubtless be used much more than they have been in the past.

The form of the clothing should be as simple, as light, and loose as a sensible regard for appearances permits. The general plan may with slight modifications be used for all ages up to the time of puberty. Thus, as soon as the child is old enough to have acquired habits of cleanliness, he may wear the so-called union underclothes; these as was stated in a previous chapter, consist of shirt and drawers united in one garment. For the autumn and spring a medium weight should be used, and for winter one may select either a heavy weight, or two lighter garments may be worn at one time. For summer the woollen wear may well be discarded for muslin or cambric; but in this event sufficient changes must be made to prevent the wearing of sodden clothes. The stockings in

winter should be woollen, long enough to reach well above the knee, and should have a fast black dye. In summer they may be of cotton, silk, or cotton mixture, and should be white or one of the light colors. The practice of having short socks on young children, which is unfortunately continued by some mothers into cool weather, should not be countenanced. The legs have the same reason for being covered as any other portion of the body, and may likewise be injuriously affected by inequalities of temperature, draughts, and other congestive influences. The same reasons forbid the exposure of a child's chest; and even in very warm weather it is advisable to have the whole body covered. There is no doubt that young children may suffer acutely from the heat, and every rational effort must be made to keep them as comfortable as possible. But this can be done by lessening the number, weight, and tightness of the garments, instead of cutting out parts which rightfully should remain.

Over the undershirt comes a waist to which the shirts and stocking-supporters may be attached. This waist is often corded for the sake of giving it a fairly permanent shape, and should be made of the various fabrics that be-

long to different seasons. Thus, in summer it may be muslin, but it must be thin enough for comfort; in spring and autumn it may be made of coutil, and in winter two layers of light coutil or a sufficient thickness of flannel are desirable. This garment should be high in the neck and long in the sleeves, and may be fastened with good-sized buttons. In the lower band there should be a series of worked slits which resemble a buttonhole; and through them a strong and broad tape may be drawn, to which buttons are to be sewed. These buttons are meant to support the two little skirts, one of which should be of flannel, and the other of muslin, cambric, or nainsook. The weight of the flannel skirt must naturally be regulated by the season, and in very hot weather it may be laid aside. For ordinary children in good health, no abdominal band is at all necessary, and the use of it in summer may give an irritating feeling of heat and discomfort. Under the usual circumstances there is no more reason for wearing a knitted band on the abdomen than one over the lungs or about the throat.

The outer garments come next in order, and require no special mention; for from what has been said the mother can easily deduce what

their requirements are. It is hardly necessary to say that young boys' knickerbockers should be buttoned on to the waist in place of the two skirts which girls wear. Boys usually wear a loose waist, or a sailor waist which has a deep enough fall over and below the waist line to hide all traces of band or buttons. All the changes which fashion and individual taste may suggest are usually harmless in their effects so long as they are not allowed to interfere with the characteristic necessities of proper material, ease, and looseness of cut, suspension of all weight from the shoulders, and absence of binding or constricting garments or appurtenances, as, for instance, in the way of garters. The round garter should never be worn, for its evil effects are peculiar to itself, while its advantages are better obtained by the suspension elastics which are fastened from the side of the waist. The clothing must be suited not only to the season, but also to the uses which it may be called upon to serve. Thus, in times of play, the child should wear such garments as will not in any way interfere with his entire liberty of both mind and body. If he is daintily and expensively dressed, he will naturally be restrained in his running, jumping,

falling, digging, delving, building, and numberless other exercises which are his by right and choice. Therefore his play-suit must be easily washable, strong, and with a fairly smooth surface. A good quality of denim answers the purpose excellently; and if it is made in the form of overalls, it will give much satisfaction to both parents and children. Little girls as well as boys may wear them, and the only change from the usual form that need be made is a widening about the waist and buttocks, so that the skirts may be tucked in and be well protected. A child thus clothed has an exhilarating sense of freedom; he does not fear to express all unrestrained effervescence that is characteristic of his age, and his possibilities of enjoyment are proportionately enlarged. In general terms, one may say that it is a good plan to use old clothes, as long as they last, for nursery use, for use in country and park. In cities, when children are allowed to go to a park, they are commonly overdressed or overdecorated; they may look more genteel or more prosperous, but they do not have as good a time nor do they derive as much benefit from their exercise as if they were plainly or even somewhat roughly clothed.

A noteworthy part of the costume is the shoe; for on the choice of it depends much of the child's activity, freedom of movement, and grace of carriage. It is a really remarkable fact that in this detail of clothing, which can so easily be properly planned and executed, there should be so many poorly designed articles. Nothing can be easier than to observe carefully the formation of the foot, to obtain its natural outline, and then to adapt the shoe to these elemental requirements. Nevertheless, a correctly made shoe is not easy to find, and manufacturers continue to make the same faulty styles that were in use many years ago. Even in a baby's shoe these misconceptions may be seen; and whatever attempts at reform have been made are, in most cases, makeshifts. If one will blacken the sole of the baby's foot, and then take its imprint on white paper, one will readily see that it forms the approximate outlines of a triangle, the apex of which is at the heel; moreover, when the foot is placed upon the ground, it has a tendency to spread out somewhat in the fashion of a duck's foot. From the toes and the fore part of the foot the fine motions of balancing are accomplished, and the carriage and walk are controlled. This part, therefore,

should have the maximum of freedom, if the function of the member is to be fully developed. In addition, until the muscles have obtained a useful measure of strength there should be as little restraint put upon them as possible. During the weeks and months while the child is learning to walk he needs all the aids that he can naturally obtain to help him in balancing; and, therefore, a broad, flexible fore part of the foot is much more useful than a narrow, rigidly held one can ever be. Thus, one can easily recognize the need, during infancy, of a soft, soleless shoe, or "bootie," and during the period when the child is learning to walk, of a soft, loose shoe that is narrow at the heel and very broad at the toes — in short, one that is made and shaped like a moccasin.

As the child grows older and his muscles grow stronger, he will, if he is in health, begin to walk of his own accord. And in almost all cases he needs no artificial helps or aids. If certain muscles, or groups of muscles, are undeveloped or lacking in native strength, it is not wise immediately to use supports. The defective muscles should be made strong by properly selected exercise rather than weakened by props, which take away the work that they ought to

do. There is no doubt at all that weakened functional activity can be strengthened by properly directed attention, and such is the proper method to be adopted. If the mother is not able to do this by passive motion, massage, and simple exercises, she should obtain the requisite information from an expert. For this reason it is unwise to use the so-called ankle-shoes, which have the paralyzing effect of a corset. They stifle the free play of the muscular structures; and if the part eventually becomes strong, it is not on account of, but in spite of the artificial support. Naturally, this decision applies to cases of mere muscular weakness, and not to those of pathological deformity. With ankle-shoes and braces put out of the way, the shoe must be adapted to the form of the foot instead of the foot being adapted to the shoe. The sole should never be too thin, the front of the shoe must be very broad, the heel and counter should be reasonably small; the highest part of the arch of the instep should be toward the inside of the foot, from which to the outer edge there is a moderately sharp incline. Such a shoe may not look decorative to eyes that are accustomed to sharp toes and broad heels; but it has the greater advantage of

being useful and comfortable, of giving a firm foundation for the sole, while it provides sufficient protection to the whole foot.

The leather which is used in the making of the shoe should be kid, calf, or similar skin that is thoroughly porous. Patent leather, enamelled leather, and other waterproof material should never be used. They make the skin wet and cold, tender and irritable; and their only extenuation is their decorative effect. High overshoes or rubber boots have a certain amount of justification because they are worn for no more than short and separated intervals, for during those times they adequately protect the feet from cold and moisture. But as soon as the child enters the house, they should be removed and the feet should be thoroughly dried. Before putting on rubber boots the feet should be covered with felt slippers.

While a child's clothing should be comfortable, becoming, and of a good quality, it ought never be too pretentious in style nor lavish in its decorations. A child should give the impression of unspoiled simplicity, should stand for a developing personality that is innocent and pure enough to be untouched by the garish vanity and class distinctions of the older world.

Not only do his clothes influence the estimation which other people form of him, but even more, they affect the opinion in which he is apt to hold himself. One of the best ways to make him vain, conceited, and petty is to overdress him, to fasten his attention on his external decorations. In this way such details come to take the place of an important ideal, and simultaneously to exclude, in a proportionate degree, the growth of ideals of real value. A reasonable pride in decent and dignified dress is a good thing; the abuse of such pride is a very bad thing. The potentialities of a child are so great that interference with their best fruition should be undertaken with fear and trembling. A child is apt to seem pretty and doll-like, in all likelihood he is pleasing to the casual eye, when he is decked out in gewgaws until he resembles a lay figure; but such characteristics fade away into woful triviality when one considers that in the bespangled breast may beat a heart of future greatness, and under the beribboned cap may lie a brain that will give out large thoughts. If dress is the index of the man, it certainly has some influence in describing the formative surroundings of the child.

CHAPTER IX

HABITS

MATTHEW ARNOLD used to say that conduct was three-fourths of life. But he might have gone farther and said that all of conduct was contained in habit; indeed, he would have been strictly within reasonable bounds if he had claimed that habit constituted nine-tenths of life. It is the factor that controls both thought and deeds; it takes the place that instinct holds in animals, and with every increase in the complexity of life it augments its power. We usually think of it as the controlling force in a few of the well-settled customs of daily routine; but, as a matter of fact, its range of influence is infinitely wider. The manner of dressing, of washing, of eating, of walking; the posture and carriage of the body, the peculiar character of physical expression; tricks of speech, the point of view that designates how conduct is directed, the decision which governs most questions of ethics, morals, and religion, all these and more

fall within the legitimate confines of that great force which we call habit. Many of the traits which commonly come under the heading of heredity and, practically, all of the effects of environment are really matters of habit. And it is often difficult to say whether any existing characteristics, outside of the organic conformation, has not originated in the ceaseless repetition of acts and thoughts that gradually and unconsciously changes impressions upon plastic infancy and childhood into the fixed and characteristic habits of maturity.

The question of plasticity is an important one, and the younger the child the more important is the place it holds. For in such persons nothing is fixed, everything is potential. The brain is not in its mature form, it has not acted as the pathway of numberless nerve-currents, each one of which comes from one definite place and goes to another. According to the forces which may be brought to bear upon it, these nerve-currents may be sent in one direction or another, they may form various intersections, and they may assume various degrees of intensity and emphasis. Brain tissue follows the rule of all physical substances in being susceptible to certain impressions which, when indefi-

nitely repeated, predispose the constituent particles of such substances to react in a definite and inevitable manner. Thus, a piece of paper that is once folded has ever afterward a tendency to fall into the same crease; and the sureness with which it falls into that crease is measured by the number of times the process is repeated. A piece of wood that is once polished is more and more easily made smooth and shiny — it has acquired the habit of being polished. A road that has been ridged by a heavy wagon-wheel has acquired the habit of containing ruts, and every similar impulse tends to make the ruts deeper and the habit more pronounced.

In animals similar processes exist, but in greater complexity. Leaving out of account for the moment the factors of obvious training, we know that the whole organism may and does take on certain phases that, by reiteration, become permanent. A dog may become so accustomed to a certain sort of food that he will really faint from hunger, or even starve, rather than eat a different sort. A horse may, as a matter of routine handling, have been spoken to and soothed by the driver's voice and vocal expression, and if this method of control is suddenly altered, he may become unmanage-

able and temporarily worthless. And in proportion to the place in organic development which an animal or person occupies, his organization is plastic. Human beings, as a whole, have this plasticity in a marked degree, and most of all in their earlier months and years. Thus, an infant may be regarded as no more than a bundle of potentialities, which is another way of saying that his final, crystallized form represents a bundle of more or less firmly set habits. This crystallizing process begins at no exactly definite time. It certainly is in action directly after the child's birth, and may, in addition, begin before birth in the various degrees of the child's nutrition, which predispose him to receiving and interpreting certain nervous impulses. A baby may, on account of under- or over-nutrition obtain a corresponding ability to react to certain impressions, and this, in turn, may have an important share in the responsibility of building up his future life. Therefore, an attempt to shape the child's habits ought to begin with a wise and sufficient attention to the mother during her pregnancy, or even before.

At all events, after the little one has come into the world, the question of habit-formation

immediately becomes a burning one. Nothing can possibly be more important than it is, for it is a factor that is always active. This sweeping ideal must never lose its hold on parents' minds, and the more thoroughly they embody it and live it out in their conduct, the more deeply will they influence their children's development. They must be constantly on the watch for acts and tendencies that mark the beginning of a habit, and must as constantly be prepared to encourage the good and discourage the bad. The start is the important thing, for more can then be done in one direction or another than at any other time of life. A clear conception of what constitutes good and bad habits must be formed, and then the conduct must, as far as possible, be made to square with that conception. And not only is such a course beneficial in regard to the particular matters in question, but also it has a definite use in promoting a disciplined and orderly budding out of the faculties that have been latent.

For instance, one of the first things in the way of habits that a baby must learn is to lie quiet when he is awake and not nursing. The practice of carrying a child about, of tossing him in the air, of rocking and dandling him, is

absolutely superfluous. There can be only two excuses for it: either the child is sick in some degree, and thus is restless and feels pain, or his relatives and attendants desire to amuse him and themselves by treating him as if he were a doll to be played with. If the first supposition is true, then he should without delay receive such medical treatment as will restore his health; if the second is the case, then the child is being trained to be restless, desirous of excitement, wanting in repose. These are some of the unfavorable characteristics of our time, and are responsible to no small extent for the wear and tear from which the modern person suffers. The custom of adding to the baby's tossing by making uncouth noises, pulling grotesque faces, and cutting capers in order to make him laugh is likewise unnecessary and doubtless harmful. To a child of this tender age everything is new, and the ordinary events of his little existence are certainly novel. The contortions and gymnastics that people commonly believe amuse him must certainly be exciting for his small mind, must carry him away from the perfect restfulness which constitutes the best atmosphere for the full development of his body and mind. At this period of

his life he should vegetate, he should nurse, sleep, breathe, and fulfil his primary physical functions. And everything else is beyond the mark.

The circumstances of nursing and sleeping should be as simple and as natural as a due respect for sanitary and hygienic laws permits. Not only need he not be rocked to sleep, nor walked up and down the room to make him quiet, but also he should not be temporarily soothed by means of sugar teats, empty rubber nipples, rubber "comforters" or "pacifiers." The habit of using these articles is a thoroughly bad one, and should by all means be abolished. All infants possess the sucking reflex in so acute a degree that, as a rule, very little is needed to develop exaggerations and distortions of it. Thus, one may start some of the vicious sucking habits, such as finger sucking, clothes sucking, attempting to use any and every article for this purpose. By such means the fingers may become wasted and shrunken, and the mouth lose its shape; in addition, the habit of tongue sucking (doubling the fore part of the tongue back toward the pharynx and then sucking), or even tongue swallowing, may be thus encouraged. Possibly the most imminent

danger of all is the likelihood of infecting the contents of the stomach and intestines with harmful bacteria. There is little doubt in my mind that a noteworthy proportion of the cases of summer derangements of these organs, of unexpected diarrhœas and vomitings, and even some cases of bronchitis are so caused. For whether the child sucks on his fingers, or on the corner of a pillow, or a rubber "pacifier," or a home-made sugar teat, the result may be much the same: he takes repeatedly into his mouth articles that are not surgically clean, that may be polluted with pathogenic germs, and that, therefore, may threaten the child's nutrition, health, or even life.

While such training is in its nature prohibitive and, therefore, negative, a bit of positive habit formation may be begun at a very early age. Most children, as a rule, do not develop habits of cleanliness until an unnecessarily protracted period. This time often extends to the fifteenth month, the eighteenth month, and even the twentieth month. No mention need be made of children who do not obtain control of the bladder and rectum until they are two and a half or three years of age, for they are either pathologically deficient in control or suffering

from actively bad training. One may find that the bladder sphincter is somewhat harder to train than that of the rectum; but both are sufficiently amenable to constructive teaching. If from the third or, at the latest, the fourth month the child be supported on the chamber vessel at regular intervals, and especially if he is held in the crouching position that is essential to real ease in defecation, he will in a surprisingly short time respond in a satisfactory manner. These intervals should be decided by the approximate times when the spontaneous movements have appeared. At first it will be necessary to make the intervals at least four times a day; in a short time three will be enough, and, in most cases, the child will end by having two regular movements daily. Of course, one cannot expect success immediately in this any more than in other important matters. But a logical persistence will, within two or three months, give a gratifying result. To control urination will take a considerably longer time; although it is not hard to convince sensible parents, if they follow out the plan, that an element of regularity will soon appear, and that their work will thereby be lessened while the baby's comfort is materially increased.

The habit of regularity should be employed in all the details of the day's routine: the child should awake or be awakened at a certain hour; his feeding must come at a definite time, and if at that time he is asleep he must be roused; the time of his bathing should likewise be fixed; his trips into the open air demand an equal carefulness — in short, the child's whole life should be laid out by the clock. This will be his first lesson in obedience, which should represent a recognition of a necessary law of conduct. The question of obedience should have something logical in it, and the source of that logical quality must be in the demands of the parent. There is really no reason why parents should not be entirely logical in their demands; even young children respond to a conscientious manner of forming one's opinions as well as to arbitrary and thoughtless ruling. And if they can be subjected to some carefully ordered plan in the changing affairs of their daily life, there will certainly be less friction and commotion than otherwise. At all events, however, they must learn to obey; and obedience that comes readily and spontaneously is worth more than a tardy and partial compliance. They must from the very first realize that the controlling power

resides in the parents, and that whatever power exists is being humanely and deliberately exercised. At the same time, they must know that humane and deliberate principles are thoroughly consistent with firmness. This firmness presupposes so much forethought, self-denial, and struggle against indulgent affection that it may occasionally be difficult to embody in action. But whether or no it is hard, it must assuredly be acted out. No child is benefited by over-indulgence, and most children find their best preparation for mature life in a consistent discipline that demands unqualified obedience to reasonable rules of conduct.

While the habit of obedience is a valuable one, it must not be expressed in such rigid forms as to lead to the evils of exaggeration. A child that is ruled and governed too much is apt to have a cowed and deceitful mind. The logical outcome is an imitation of the harsh qualities of cruelty and tyranny. Children, somewhat like savages, fall very easily into these vices, partly on account of thoughtlessness, and partly because their faculty of imagination is not well directed. No matter what the nature of the predisposition may be, we all know that it exists. To restrain his tendency

while conserving the normal amount of aggressiveness and independence may be a difficult task; but no matter how difficult it is, it should be undertaken with as devout a sense of obligation as the parents can command. A cruel child, although answering closely to a natural type, is, and must be, thoroughly offensive to the best aspirations of a civilized parent; and with every manifestation of such a tendency a definite retrogression from a laudable spiritual condition has been made. A healthy spirituality is not necessarily God-given; its origin may be distinctly earthly. Not counting the cases of special predisposition toward it, the quality exists, in some degree, in all persons. Extraneous circumstances according to their nature encourage or discourage it. And one of the factors that most surely make it wither is the utter disregard for another's personality, which we call cruelty.

Viciousness rarely appears in a single form, and an unfortunate habit is usually founded upon so many different factors that various related habits increase by a simultaneous construction. As an example, one may cite the close relationship between cruelty and cowardice. Some of the constituent factors of the

former, such as seeking an advantage over persons who are unable to resist or defend themselves, fear of discovery, secretiveness, and a disposition to evade consequences, are likewise characteristic components of the latter. In fact, the relation between the two is so intimate that the existence of one is often a safe indication of the other. As a matter of practical experience, the habit of fear, of being cowardly, is in a normal child quite unnecessary. It grows from repeated impressions which are generally made upon the mind of the child for the purpose of enforcing discipline. To the charge of committing this weak and vicious mistake, parents as well as nurses must often plead guilty. We are too much in the habit of attributing to the "ignorant nurse-maid" the practice of frightening children by stories of ghosts, "the black man," "the boogy man," and the mythical policeman who is supposed to take bad little boys and girls away. And, as a matter of real experience, many mothers do the same thing. In addition they bolster up the habit by expressing fears in their own person; and this leads to the same inevitable result. The woman who is afraid to go into dark rooms and places, who is afraid of the thunder or the lightning, who falls

into a paroxysm of terror at the sight of a mouse or a rat, who shivers and cries at the touch of a caterpillar or a beetle, who fears dogs, cats, cows, or other harmless animals, is much to blame in making her children timid, suspicious, weak-souled, and apprehensive. Cowardice and bravery may be congenital qualities; but more often they represent an acquired tendency, a condition of mind that has grown up from small beginnings, a process of evolution that tends to become crystallized in the matured person, who finds himself unable to escape from the stigmata of early training.

What is true of cowardice, of cruelty, of obedience, of regularity, is equally true of the other habits which lend distinctiveness to the individual character. Courtesy is taught with difficulty to grown-up children, and it is as hard to assume good manners after childhood has passed into youth as it is to acquire a clean-cut taste in regard to dress or household decoration. With most people the impress that is made upon them in their early years lasts for the greater part of their lives, and in many cases forever. They may, with the passing years, obtain worldly experience, they may acquire the polish which social intercourse and thought give;

nevertheless, the common rule demonstrates that they rarely obtain the perfect ease, repose, and finished culture of manner which distinguish the man who is born and brought up in a home of refinement and good breeding. The peasant's cottage may contain as many sterling virtues as exist in a house which has sheltered generations of scholars and gentlemen; but peasants come forth from the former, and gentlemen from the latter. We are too apt in the present day — the time of the so-called common people — to deride the advantages of birth and to exalt unduly the rough and ready manner that, fortunately enough, may sometimes go hand in hand with sterling and manly qualities; but the fact remains that the habit of gracious and modest bearing, of sweet-toned and harmonious demeanor, cannot be put on like a garment. One must grow into it, one must incorporate it as an integral part of oneself, one must breathe it in as one breathes the air that cleanses the blood.

Yet another habit that grows with the child's growth is his use of language, and the accent that marks his speech. As the parents talk, so will the child talk. The ear becomes so habituated to certain sounds and inflexions, the eye

becomes so used to certain motions of the lips and face, the muscles of the tongue and lips become so accustomed to certain movements, that they finally come to act in these ways as a sort of second nature. Parents who are scrupulous of the exactness of their phrases, of the correctness of their grammar, of the purity of their expression, are providing a daily training that will be of invaluable assistance to their offspring. Colloquial speech must be taken seriously, for the child is unable to distinguish between good and bad usage. Slovenly English is as good in his ears as exact English, and the only absolute standard for him is present usage. It is as easy in early childhood to obtain a large and carefully differentiated vocabulary as a small and undiscriminating one; but the difference between the two in later life, when success depends to so large a degree upon spoken intercourse, is very great. In childhood the acquirement of language and its refinements is a matter of unconscious development; later on it is an act of conscious effort which consumes both time and energy. For such reasons parents must watch their words, the framing of their sentences, and the faithfulness with which the words express their

meaning, as they would their acts and the interpretation which children would naturally place upon them.

So far we have been considering general habits, which have much to do with giving character to speech. In addition there are particular and peculiar habits which, although they have a more individual bearing, are worthy of careful attention. The usual habit of speech is an approximately even flow of words which more or less closely express the child's meaning. But there are exceptions where the flow of words may not be even, or where they express little or no meaning. Some children have difficulty in uttering the syllables of words. The trouble is not plainly associated with particular sounds, but rather with the clear, sharp, and unobstructed attack with which syllables and words are begun and the continuity which binds them together. No more than the first sound is made, and this is repeated with growing rapidity and embarrassment as the speaker's nervous spasm increases; finally, the whole word may come out as if forced by a strong effort against an obstacle. This habit is what people call stuttering. It has no connection with defects of the speech organs, but rather should be

regarded as a combination of nervous poverty, lack of self-control, and, in many cases, imitation. It has no more reason for existence than other habits of defective speech, such as drawling, hurrying, senseless and wearisome repetitions of sounds, words, or phrases, or the prolonged use of babyish pronunciations. The stutterer can be cured of his fault both easily and quickly, if he is taken in hand at the outbreak of the habit. He must be made to speak slowly and evenly; he must, as soon as he starts to stutter, be stopped, quieted, and told to begin again. He must be faithfully drilled in repeating words and sentences until ease of speech is as inevitable as lack of ease formerly was. The parent or teacher must be patient, gentle, and persevering; and outbreaks of temper will do more to confirm the bad habit than can be undone by half a dozen lessons.

A related habit that is often confounded with stuttering is stammering. This shows itself in an inability to pronounce individual syllables or sounds readily and distinctly. It may be the result of imitation alone, but often that effect is augmented by nervous poverty and exhaustion. There may, likewise, be some defect or disability of the organs of speech which limits the func-

tional activity. Thus, the child may have a tongue-tie, or hare-lip, and cleft palate; or the pharyngeal tonsil may be hypertrophied, and, as a result, the normal development and shape of the nose and upper jaw may be arrested or deflected. This small list is no more than a part of what may exist, but it is capable of showing how varied may be the influences which interfere with ordinary speech. Therefore, when a child begins to stammer he should first be taken to a skilled physician for examination and, if necessary, treatment. After that, one may begin with careful instruction in correct speech. Instead of purely physical disabilities or the influence of bad example, there occasionally occurs a case of defective speech habit that is due to nothing except mental and nervous deficiency. As an example, one may take the curious phenomenon of echolalia, in which the child will repeat again and again a word or phrase that has happened to strike his attention. Such manifestations, and those more startling ones, like functional aphasia, should be immediately referred to the skilled specialist.

In the same manner that a child may contract bad habits of speech, he may also learn unfortunate customs in other respects. At times the

origin of them is mysterious, and their persistence is often equally noteworthy. In this category one may include the vicious practice of nail biting, the evils of which are so plain that they need no demonstration. The children who practice it are almost always nervously depressed, or even congenitally asthenic; and therefore, outside of any measures which one may adopt to discourage them, the broader idea of the systemic need of treatment should always be kept in mind. To paint the nails with bitter solutions in order to give a bad taste to them is good enough in its way, but it does not go as deeply into the matter as it ought, nor does it search out the root of the trouble. This attempt at a radical rather than a provisional cure falls in line with the main thesis of this chapter: that habits are the expression of repeated impresses upon the mind, and to make or unmake them one must steadily keep before one's eyes the fundamental laws of psychology instead of a merely unreasoning encouragement of this manifestation or an irrational discouragement of that symptom.

The need of a definite plan is especially to be seen in such a deplorable habit as that of masturbation. This is an especially good

example, because it must seem to everybody unnatural, destructive, and utterly vicious. It is more common than parents are usually willing to confess, and in many instances it flourishes for years before the mother discovers it. In many cases which have come under my notice the practice existed from a very early age, and some have begun very shortly after infancy. Such children should not be regarded as naturally depraved and vicious, nor should their unfortunate habit be hidden and left unexplored. On the contrary, all the details and aspects of the case must be fully investigated, and a searching inquiry into the probable cause of the defect must be made. A mere forbidding of the practice or the infliction of a punishment is neither rational nor effective; one can hope for much greater ultimate success if one will carefully and patiently try to pick out the factor that is making the undesirable impressions upon nerve-cells. In some cases it is a deformity or physical peculiarity, such as a long and tight foreskin in a boy, or an adherent clitoris in a girl; in others it is the bad example of vicious nurses or companions; in yet others it may be some lesion in the central nervous system. In the first case, surgical measures will give relief;

in the second, changed environment, firm but kind correction, and tireless watchfulness will be of distinct service; and in the third, medical treatment or the use of hypnotism may diminish or obliterate the evil. But in every case one of the main factors is the recognition of what a habit really is, as well as the earnest attempt to provide a cure that is as insistent and steadfast as the impressions which it is intended to remove.

If one would embody such an ideal in the standards that are placed before children, the benefit which they would obtain must be really great. The habits of persistence, of concentration, of self-control, are unquestionably susceptible of being taught and being learned. And in most cases this method is the surest means of inculcating such characteristics. A few exceptional persons may arrive at the same result spontaneously or by experience; but as a rule, the most reliable way of obtaining desirable mental conditions is the slow and positive one of imitative habit. In the little affairs of a child, he can, in his small way, exhibit qualities that will in later times make him a better, stronger man than the average, and the world a better one for his having lived in it. There is

no reason why his youthful disposition should be allowed to vacillate in its native unsteadiness; and at the same time these habits need bring no burden of crushing discipline upon him. On the contrary, if he sees these habits in his environment, in the characters of his parents and guardians, and in the applications of stories and tales to ordinary life, he will, unconsciously or sub-consciously, take them to himself as he takes any less laudable conceptions of conduct. The habits of a child or a youth, looked at from this view-point, are not entirely due to himself; and whatever praise or blame they provoke belong only in part to him. The parents and guardians are fully as responsible as he, and possibly more responsible than he. If he is industrious, law-abiding, and decent in demeanor, they may feel a reasonable amount of self-congratulation. If he is deceitful, lazy, and vicious, they should look well into their own lives for the controlling factors. They do only a part of their duty if their external life is what the world calls respectable while their private and intimate deeds and thoughts are faulty. A child cares very little about respectability; he is strikingly direct in forming his ideas and estimations. And what affects him

most is intrinsic intentions rather than extrinsic appearances. The care of a normal child consists of much more than providing shelter, food, clothing, and conventional instruction; fully as much, it includes the living of such lives by the parents as will approximate in the closest possible degree to the ideal which they hope to see in him. The parents must look to it that their days must be times of high thinking, of clean and pure living, of strenuous endeavor, of devotion to what they consider noble and fine; for by means of their offspring they project their own individualities upon the world. They may be satisfied to have low aims for themselves; but they have no right to impose similarly poor aspirations upon their child, and condemn him to a grovelling existence.

CHAPTER X

RELATION OF PARENTS TO CHILDREN

THE proper care of a child is a method of higher education for the parents. The subject-matter is so various, the attention to details is so exact, and the self-devotion is so constant, that one cannot be far wrong in calling it the highest education. This standpoint, if logically adhered to, will create a distinction between the poorer methods of rearing children that were in use in the past and the better ones toward which the thought of to-day is moving. In past times children were taught to regard themselves as being troublesome, stupid, without knowledge, judgment, or tact. The rule that children should be seen and not heard carried its crushing influence through all their little lives. They were excluded from family and social functions, they were allowed to take no more than a very small part in the domestic councils and confidences, and their personal affairs were deemed too unimportant to admit

of much notice. In a word, they were made to feel that their existence demanded an excuse, and that assertion of their individualities was almost domestic treason. In families of limited means they were made to work beyond their capacity, and their duties were turned into burdens; among the wealthy the custom of handing them over to the care of nurses and governesses, so that the parents saw little of them, and had less to do with their rearing, was almost universal. If one looks at such customs objectively and frankly, one would think that children were some sort of semi-civilized animal, whose natural wildness required strong measures for its control, and whose companionship was to be endured and not desired.

We have come to regard these things somewhat differently now. We realize that children are fully as human as their elders, that they have hopes and aspirations, fears and doubts, joys and sorrows, in much the same way as their parents. It is true that their lack of experience gives them a deficient sense of proportion, and that their ignorance of worldliness leads them to make curiously literal interpretations of persons and things. But these characteristics are in many ways advantages rather than dis-

advantages. The children are placed in their parents' hands not only helpless, but also unformed; not only dependent, but also claiming progressively greater attention; not only possessing possibilities of good, but also possibilities of evil. The choice of these alternatives does not lie with them, but with the parents. The children must submit to whatever decision is made for them, and the unfolding of their lives depends upon the fitness of the father and mother to direct, encourage, and repress the various characteristics that have need of such control.

In order to do this work, thoughtfulness and devotion are absolutely essential. Good intentions are a meagre foundation for the noble superstructure of requirements which the circumstances demand. A woman might as well try to substitute good intentions for a knowledge of cooking when preparing a meal, or a man for the ordinary information of commercial forms when trying to conduct a business. Intuitive feeling and hearsay instruction are a poor enough makeshift for a knowledge of how to feed and clothe and dress a child; but when they presume to dictate the manner of building up a definitely good relation between child and

parent, as well as the formation of a clear, healthy atmosphere in the home, the task immediately becomes greater than reasonable expectation can hope to see fulfilled. So long as this is true, there is an obligation for the parent to consider the subject in all its aspects, and to ascertain how far he must progress beyond his existing limitations in order to satisfy the rightful claims of the situation.

First of all, he should consider what the child is, what he ought to become, and what are the means at hand to bring about the desired end. The little one comes unformed, unwitting of every fact of life, absolutely ignorant of what this world, in all its myriad manifestations, really is. These things and many more he must learn from his parents and the environment which they provide. What they are to teach him is not only what they have learned, but what they themselves are. And the environment means much more than the apartments in which they live and the furniture which they use; in addition, it means the spirit which pervades the home, the intentions that lie at the basis of their action, and the self-control by which they maintain a nice equilibrium of heart and mind in all the varying and trying

circumstances that are incidental to ordinary life. This conception includes within its bounds all people — the rich and poor, the ignorant and the learned, the resident of the city and the dweller in the country. It embodies a truth of human nature which is so broad that it admits of universal application. By such a method of reasoning we arrive at a wide generalization, which is the beginning and the end of the art of wise parenthood: the influence of parents is the direct reflection of their lives and thoughts. Here is a field where deceit cannot long abide, where in the long run honesty counts for a quality of unlimited value, where sacrifice to a healthy ideal brings its rewards in progressively increasing amounts.

It is very hard to deceive a child, although he is young and simple. Indeed, even at the earliest age, and when he is far from being capable of analysis, he shows a marked adaptability in receiving impressions. His plasticity is so great that it assumes the likeness of an active influence, as a sponge fills out with the water in which it floats. Therefore, the time to begin forming a child's disposition or character is really at birth, or even before birth. Do the parents wish him to be kind-hearted, gentle,

frank, and honest; do they wish him to be deferential to women, sturdy to the world, hearty and unselfish in his manner to companions? Then they themselves must consider what these qualities are, they must incorporate them in their own thoughts and acts, and finally, they must demonstrate them in the big and the little details of everyday life.

In order to clear the ground for more particular considerations, another preliminary fact must be disposed of. The place and importance of the nurse-maid are commonly exaggerated. She is regarded as being more necessary than she really is, and, in the ordinary case, she is too much depended upon as well as too much courted. In the families of the poor, or those of ordinary means, the choice is made from the least experienced and helpful girls; for the parents believe that anybody is good enough to wheel a baby-carriage or carry the baby. In the wealthiest families a somewhat more sophisticated person is demanded; but the sophistication usually concerns matters of externals rather than real fitness. It is undoubtedly true that the large majority of these servants have very little real fitness for their work. They have received no real and efficient training,

they are commonly ignorant, and the most favorable thing that one can say for them is that they may be actuated by a decent amount of good intentions. The incongruity of the whole situation is remarkably striking: the mistress of the house will often assume the personal care and supervision of her fine china or a fine picture, and she would never think of putting a piece of old lace in the custody of a chance servant; but a child is evidently considered less valuable or less susceptible to injury. Since every mother naturally believes that her baby is the most precious thing on earth, the conclusion naturally follows that she does not realize how intimately he may be and is influenced by early companionship.

This touches the very root of the whole matter: the child *is* susceptible to impressions of one sort or another from the earliest age. That is the time when the forming of his character and his distinctive traits begins. The mere fact that he does not immediately demonstrate the effects has little to do with the case. An illustration of a similarly slow but sure effect may be seen in the unconscious growth of speech. A very young infant who hears a certain language or dialect is naturally uncon-

scious of its characteristic peculiarities, but, nevertheless, within a few weeks or months he begins with inevitable certainty to use that language or dialect. If this were the place to go into the discussion of the physiology of nerve-impressions, it would be no difficult matter to demonstrate how the same rule applies to the other factors involved in growth. And, without argument, any one can see that what is true of learning words and accent is, in a similar way, true of the elements of conduct; it is no more than another step to recognize that the elementary parts of conduct — the motives, feelings, and passions of the person — may likewise be transmitted. And thus we arrive at the conclusion that the earliest companionship of a child is a matter of grave importance. To place such responsibility upon an uninstructed, uncultured, unthinking young girl is reckless; it is wilful extravagance of the worst sort; it means throwing away the opportunity of producing the highest results, of making the closest bonds between child and parent, and really invites indifference, misunderstanding, and division of purposes to be permanent residents in the home.

The care and rearing of a child are matters of

such importance that the mother alone should be intrusted with them. It is not out of the way for her to take an assistant to do the rough work, the fetching and the carrying. But the personal part of the service belongs only to her. She is the one who will ultimately reap the rewards of good or bad training, and she is likewise the one who must provide the essentials of that training. She must enter into the problem so earnestly that her duties will at the same time be pleasures. Even if she were so abnormally constituted that parental love did not impel her to work out all the possibilities of the situation to their full extent, nevertheless, there is a sufficient field for the exercise of finished powers of observation, of fertile suggestion, of ready tact, of logical reasoning — enough to busy a thoroughly active mind.

From the earliest months she must *live* with her child; she should wash him, nurse him, put him to sleep, take him in the air for his exercise. As he grows older she must provide and direct his amusements, from the earliest time, when every sound and sight are new facts to his unfolding senses, to the period when his pleasures and duties resemble those of adults. She

must guard him from careless or rough handling, must enforce a kind but firm discipline, must teach him to be dependent upon her more than upon any other person in the household. At this time the father cannot expect to take a large share in the baby's training, for the necessities of his business will keep him away during most of the little one's waking hours, and, in addition, he cannot be expected to have the deft touch and the intuitive knowledge of an infant's needs that a normal mother possesses. But he can be of decided use in maintaining a quiet, peaceful, cheerful atmosphere in the home; he can give efficient help by keeping tempers unruffled and minds cheerful; and, most of all, he can develop a spirit of courtesy, of sweetness of manner, even of chivalry. Such things are more than mere counsels of perfection; they should rather be called practical directions for the building up of strong nerves, normal bodies, and healthy minds. And the man who conscientiously endeavors to embody them will find that they react upon him, and serve to ennoble his own disposition.

When the child is old enough to run about, he should live a large part of the day in the air, and all confinement must be reduced to the

minimum. To follow this idea to its fullest conclusions, he should, if possible, be taken to a home in the country or the suburbs. While it is obviously impossible for the large majority of people to have a home in both city and country, it is plainly feasible for almost anybody who is sufficiently thoughtful of the interests of his offspring to reside where the houses are not packed together, where there is an abundance of air and light, where there is no continuous rumble and roar of a big city's traffic. The modern means of communication are so excellent that a man who works in the heart of a great city may reach his home outside of that city's limits without undergoing too much strain and exertion. People of limited means can live as well and as cheaply in the suburbs or country as in town, and at the same time have advantages of healthfulness, quiet, and recreation which can in no other way be obtained. The strongest objection that can be urged against a country or suburban home is the one of overcoming the city habit or the leaving of a social circle — both of which are of little importance in comparison to the benefits to be obtained by the change.

After this matter has been settled, the parents

must make up their minds that the family must be united, not only in the sense of mutual affection, but also in daily interests, in studies, in pleasures. Of all these items the one of pleasures most concerns the growing child. It stands, in his estimation, for the greater part of life, and by means of it his parents must come closely in touch with him. Many of their own amusements may have to be thrown over: they may go less to the theatre, may indulge less in social pleasures, they may have less personal quiet than they formerly had; but the exchange will be a richly profitable one. There is no reason why parents should not find as interesting material in their own children as they do in strangers or acquaintances; there is no reason why they should not take as lively an interest in the conversation of their offspring as they do in that of their neighbors or their ministers, their doctor or their lawyer. Often the little ones are not too deficient in the reasoning quality, and commonly they possess more than the adult share of lively imagination. At all events, parents can find in intimate intercourse with their children much to learn, much to stimulate them and keep them fresh, much to lend a zest to life. They can thus review their

youth, and, by combining the spontaneity of the little ones with their own more mature powers, they need have no fear of growing old, or of finding time hang heavily on them.

To do all this there must be similar objective points in the domestic life for the various members of the family. Each one must feel that there are certain duties and pieces of work which he must perform, and that every other one has obligations which are arranged according to his capacity. Children, even those of a very youthful age, can understand this to a surprising extent. In almost all instances they respond remarkably well to appeals, especially those which are made by conduct and example, rather than words, to their sense of justice and fair play. And, from the earliest possible time, each boy or girl must feel that he is a factor in the household, that he can and does render some sort of valuable aid, that he is a responsible person whose presence is worth being taken into account. The value of his actual work may be little, but that of his potential accomplishment is truly great. And no time is too soon to teach him to live on a high plane. Such teaching can easily and naturally be combined without any stiffness of attitude in the

ordinary affairs of the day. When the father returns from his work he may participate in conversations, games, or readings in which he may ingeniously weave amusement and instruction. And if he feels that he has insufficient funds of thought and experience for the task, let him set out as a serious matter to obtain what is lacking. Children are tolerant critics, and frequently are satisfied with a wholesome intention even when performance is bungling.

On half-holidays and Sundays he should be with his little ones in the open; in summer there are rambles in the woods, in the fields, along the roads, he may suggest fishing, flower-picking, butterfly-hunting excursions; and many a time he will find that the questions which are thrown at him will encourage him to increase his store of knowledge. In autumn they may go nut-gathering, leaf-collecting. In winter there are skating, coasting, snow-balling, the construction and manning of snow forts, and all the other sports that are dear to children's hearts. And in all of them he should take a hearty part, while at the same time he acts as a judge, a moderator, an example of fairness, of chivalry, and of courage. The girls as well as the boys should be his

companions, and they need have no distinctly separate lives until they are about twelve years old. They have as keen a need as their brothers for strong bodies and free minds, and until the approach of puberty they should not be too forcibly reminded of the difference in sex.

This question brings up the weighty matter of how the parents may control the dawning knowledge of what sex is, and what the meaning of puberty is. In most families the subject is avoided, and both girls and boys are allowed to find out for themselves the changes that separate the child from the youth. The main reasons which govern such a policy of *laissez-faire* are the parents' unwillingness from considerations of modesty to touch on the subject too prematurely, and the general unfitness which they usually feel to handle the details in a satisfactory way. The first reason is not well grounded, because the question of modesty consists largely in how the communications are made; and no one doubts that a father or a mother will use much more delicacy, will try infinitely harder to give the requisite information, than servants, young companions, or chance acquaintances. In most cases when parents are forced to explain, they find that

their children have already a surprising and occasionally an appalling amount of knowledge. And the impressions which are the first to be received are commonly the last to be lost. The question of inability or unfitness to state the details is a more practical one, but it is by no means unsurmountable. A man or woman of fair intelligence, culture, and tact ought after some thought to be able to inform the child of how he is constructed, how his body and mind develop, and how the development fits into the scheme of nature. If this is impossible the family physician is usually able to supply the deficiency. Commonly he has a sufficient knowledge of natural history to give, in the course of a walk or a series of walks, a rapid account of the development of plants, with illustrations from the flowers and trees which he encounters; then to progress to the growth and generation of fishes, then of animals, and finally of human beings. And by the exercise of good judgment and a fair amount of delicacy he cannot only present the subject in a pure light, but also he can impress the child's mind with the idea of maternal self-sacrifice, devotion, and love which are the necessary factors of the mother's relation to her offspring. Thus, instead of this com-

munication being the cause of misgiving and dread, it may easily be turned into an opportunity of cementing ties of affection and promoting in the child's mind the sense of life-long obligation.

This is the spirit that should underlie the intercourse between parent and child, a spirit of carefulness, of frankness, of willing teaching, and equally willing learning. The child must under no circumstances be forced to feel that in any respect the full sympathy and coöperation of his parents are lacking. He must be made to believe that there is no concern so trivial, no secret so profound, no event so momentous that his parents are not the first to recognize and appreciate his emotions, his natural or acquired impulses, his triumphs and defeats. He must be made to feel that his home is the place where he is most welcome, where he can obtain most enjoyment. The opportunity of having fun is one of the mainsprings of youthful life, for it represents the possibility of the easy and pleasant discharge of youthful energy, of the exercise of expanding capabilities. Therefore it is in this direction that as much of the home life as possible should be directed; and at the same time the necessary duties which every person, according to

his age, should undertake must be so bound up with these pleasant features, that a flush of enjoyment spreads over the whole course of the day.

It is not hard to apply the same plan to the companionships which every child is bound to make. Let him feel that his friends are welcome, let him invite them to take part in his walks, games, and his rainy afternoons in-doors. The parents should become acquainted with these children, should exercise a wise choice among them, not so much by condemning some as by praising others. Among children even more than among adults the generalization holds true that those of like disposition and training will flock together; for children have less of the ulterior and worldly to influence their choice. And if they are well directed, their companions are apt to be unobjectionable. At all events these friends are, as far as is feasible, to be taken into the family circle; they must be made to feel the heartiness of sentiment, the frankness, the lack of suspicion and prejudice that characterize the ideal home. They should be invited to participate in the games, rambles, and excursions that the children of the house enjoy, they must be encouraged to form clubs of various sorts, they must be instructed in what ways to direct

their attention, and how to maintain a sense of good fellowship and chivalry. In all these enterprises the heads of the house must take part; not for a single day may they allow their interest to flag. This last admonition is, in a way, unnecessary; for if they have carried out such a plan during their children's early years the habit will have grown so strong, the enjoyment will have been so keen, and the freshness of their later years will be so striking that the possibility of adopting a different mode of life is barely possible.

The gist of the matter lies in the doctrine of unselfishness. It is only by giving up the narrow, egoistic traits in one's character that one can develop a strong tendency toward generosity in one's children; it is only by extinguishing whatever of the boor is in one that chivalry in one's offspring can be elicited; it is only by crushing out the sullen and sulky parts of oneself that the full joy and beauty of life can be brought out in others. Children are exquisitely human, delicately sensitive to impressions, acute in detecting shams. And if one hopes to make them loving and lovable, respecting and respectable, brave and gentle, one must as a fundamental preliminary live out

these qualities in one's own life, and simultaneously try to crush out their antitheses. A child may be deceived once or twice or thrice; but he cannot be fooled for years; he knows and cares nothing about expediency, but acts out the thoughts and emotions which his environment awakens. The parents are the head and the centre of that environment, their animus is the greatest force which forms the growing character, and their success as rearers of offspring are usually to be measured by the intrinsic worth of their own souls. We have been told that men who desire immortality must, by a conscious effort, throw off the characteristics of mortality; and it is fully as true that those who wish to live again in children of noble minds must first of all lose the traits which seem to wise men ignoble. This constant training in the search of an ideal is one of the finest things that human minds can conceive, this strenuous effort to stamp out the vicious parts of oneself is the real salvation in this world. It may be a good enough thing to try to save one's soul, especially if the saving be not too exclusive; but it is far better to try to mould one's life so that one's children may be saved. The standard of effort has happily changed within

the last two or three centuries. Men do not, as formerly, seek a selfish beatitude; they have substituted for that a broader charity, a more inclusive love. And whatever they owe to their children is better expressed in terms of daily life and immediate home influence than distant deeds of valor and pauperizing obedience to heavenly laws which bear the smell of earth. It is a good thing to change the tense of our endeavors: to strive for present happiness and joy and love, instead of looking for some future bliss which stands out in a black background of others' damnation.

CHAPTER XI

EDUCATION

EDUCATION, as we commonly know it, is a purely formal matter that is encouraged for the double purpose of conventionality and convenience. We take it for granted that every person should receive a school training; that is the custom of the time, and unconsciously we concede the rightfulness of it. We likewise believe it is a profitable thing to have, because it makes the possessor more capable of advancement in the world than he otherwise would be. The added reason of obtaining an education for its own sake, for the purpose of obtaining cultural influences, is often regarded as superfluous or at best as rightfully belonging to youth and adult life, and more especially to those persons of demonstrated ability or of fortunately large financial resources. Very often the cultural element is regarded as a detriment, because it is supposed to render the possessor less hardy and aggressive than he otherwise would be, and

therefore less able to fight his way through the world. Since there is plainly some error involved in these views, and especially as there seems to be no common factor which unites them, it is worth while to examine the subject and attempt to clear the way for the forming of more worthy opinions.

The discussion rests mainly upon the questions involved in what constitutes a desirable course of instruction, what is the age when instruction should begin, and what should be the order of the prescribed studies. All this takes for granted the elementary facts that all children need to be taught, and that the teaching of comparatively young children should be the same in all classes of society without regard to future work. For, whether the child is destined to be a banker, a merchant, a clergyman, or a bookkeeper, he needs the primary training which will serve to shape his mental growth in a healthful and profitable fashion. In considering the present methods one is immediately impressed with the idea that with most people the first year or two of schooling are really not intended for any more serious purpose than to occupy the child's attention, and to keep him quiet. What he learns in the lowest primary

grade is the merest conventionality, which, on account of his extreme immaturity, means absolutely nothing to him more than learning a certain number of sounds by rote. Whether he learns the alphabet in the old-fashioned way or the phonetic sounds in the newer fashion, the same idea holds good. If instead of being started in the primary grades at five or six years of age, he is put in the kindergarten at three and a half, four, or five years, the same remark may truthfully be made. Children are sent to this latter institution to be amused, to play with others of their age, to be exercised in songs and games. The instruction — whatever there is of it — really is a secondary consideration. Indeed, that part which pretends to some merit in the way of formal instruction is least worthy of commendation.

Since this has already been treated in another place[1] it need not be taken up here. It will be sufficient to say that if amusing the child and occupying his attention are the desired objects, they can best be obtained by the mother. She is the person who knows the little one most thoroughly, and she ought, more than any mer-

[1] "The Development of the Child," by Nathan Oppenheim, The Macmillan Company, 1898.

cenary person, to be able to sympathize with him, to recognize his needs as well as his peculiarities. The main objection that can be urged against her undertaking this work is ignorance of its technique. That objection is easily overcome by learning the principal practices of the kindergärtnerin. This would not necessarily be a heavy task, and certainly it does not require the same amount of time that the learning of a profession or a complicated business demands. On the other hand, if it is really of use in helping the child's development, its value is notably greater than any ordinary professional or business career. Under all circumstances, the first years of a child's life should be spent in the companionship and under the control of the mother, who should endeavor to acquire sufficient training to give her confidence in her fitness for the work.

This preparation should not be left until the child is old enough to attend the kindergarten, but rather should be acquired long before he is born. The mother must be ready to instruct her child as soon as he is susceptible of instruction. This time is never fixed. In some children it begins at the age of a few weeks, in others when they are a few months old. At all

events, it does not logically begin at the usual school age. There is only one way in deciding what the right time is, and that is by deciding what we mean by education. Is it to prepare the child to support himself, to give him the means to become a bread-winner? Then the training should come comparatively late, when his body, as well as his mind, is sufficiently matured to hold a recognizably approximate relation to its final and adult form. Is it to serve as mental training, to fit the child's intelligence for its later problems? Then the methods and curriculum must be changed, must be adapted to the stage of the child's development and his personal traits. Is it to amuse him, to keep him occupied and out of mischief? Then the widest liberty of choice must be the rule; rigid duties do not exist, strict teleological calculations are superfluous, and most of the routine of the ordinary school life is not required. In all likelihood the majority of mothers would not say that the earliest teaching was to be guided by any one of these plans, and probably they would be of the opinion that the training should include all three.

But such catholicity is too comprehensive.

It prescribes more than an ordinary child should absorb, or is able to absorb. We must recognize as thoroughly as may be that he represents a varying condition, a course in evolution from an almost rudimentary to a highly complex state. In his earliest condition the only teaching which should be given him is the teaching of precept and example. This is the time when he should learn the lessons of imitation, such as speaking one or more languages, fundamental rules of manner, and elementary ideas of morals and ethics. Likewise, one may create a slowly growing, but really cumulative, effect in general æsthetics and in the growth of special tastes by arranging the nursery and the most frequented rooms of the house in accordance with the impression that is desired. Formal instruction by the ordinary didactic methods should not be employed, and the habit of teaching babies to recite the alphabet, to count, to recite little poems and stories, has no good reason for justification. The common excuse that these things are not taught, but rather "picked up" by the child on account of his unusual aptitude is generally a figment of the imagination instead of cold fact. Very often it is possible that the mother may con-

sciously not do the teaching; but if she does not, then the nurse or some relative does. It does not require much perspicacity to recognize that whatever teaching is to be done belongs in the earliest age to the creating of general and massive impressions; there should be little or no attempt to particularize, to impart details, nor to elicit exactness. By setting an example, by creating an atmosphere which is honestly fashioned in the way we wish the child to grow, and by honestly endeavoring to embody in our everyday lives the ideal which we want the child to absorb, is the simplest and best training for the under-kindergarten age.

While the demands of the time do not allow the child to go without formal instruction of some sort, one should certainly keep in mind the tendency toward a premature beginning. This is to be feared for the double reason that many teachers are becoming disposed to accept children who are under the kindergarten age, and that some unwise parents want to see some educational result which the teaching is supposed to bring about. But at this early age very little excepting the most general employment should be given. Games, songs, and conversations may be very useful, especially if they

are not too heavily laden with a didactic import. Attempts to explain the meaning of occupations, which the games may typify, are very apt to be useless, if only for the reason that the child-mind is unable to grasp the fundamental facts and necessities for them. The main objective point in the games and conversations is the directing of the imagination and the emotions within such limits as may define what mature persons call the normal, the righteous, and the generous. At the early age in question the child is probably receptive to such training, but scarcely to any other. His sense organs are not well matured, and with the passage of sufficient time they will develop far enough to be susceptible of keen cultivation. The appreciation of the differences between colors, of various degrees of hardness and weight, of tenacity and resistance of one object and another, may well be left to a future time, to the experience which comes with added years. And all efforts to develop the reasoning powers are yet more futile, for the fact of pure intelligence can scarcely be called existent in the brain which lacks many of the anatomical features that later in life are bound to appear. But the control of the emotions, conduct, and the imagination is

an elementary principle that comes into being with the first flourishing of human life, and continues to a greater or less extent while life continues. This is the true function of the kindergarten, and if rightly administered it may be of the highest importance. The ability to restrain anger is infinitely more valuable than skill in passing colored wools through holes in a piece of cardboard; and learning to be cheerful, frank, and honest is not to be compared with ability to weave strips of colored paper. Teaching the motions which a blacksmith uses at the forge may be interesing enough, if nothing better is at hand; but it certainly is less valuable than guiding the mind by practical and interesting illustrations toward the beauties of filial and parental love, of the obligation of duty, of the excellences of normal subordination.

The functions of the kindergarten are largely concerned with ethics. The relation of the child to society at large depends upon the ethical sense of the community, of which he, in time, must form an active member. The task of acquiring a healthy, normal, ethical feeling is a difficult one, but it may be taught as surely as other modes of personal expression. The learning of such tendencies belongs to the period

of early childhood, when the impressions which are most easily received are the general and massive ones. And while they are being acquired the child undergoes no danger of being harmed by a routine that is not fitted for the degree of his evolution. There is no possible danger of straining weak eyes, of filling the immature head with temporary and ofttimes useless memories, or of giving to artificial educational concepts the all-important place that really should be held by ideas of duty and dependence.

In the primary school a notable change could likewise be made with advantage to the child's growth of mind and the amount of his information. Under the present circumstances the number of subjects in the curriculum is too great, the subjects themselves are not carefully enough selected, and their relative importance has not been rightfully determined. Parents have been going in the same path that their ancestors took, in believing that one subject was as valuable and as necessary as another, and that the knowledge which is desirable for a youth or an adult must likewise be desirable for a child. In this way the daily routine has been overburdened; and as the requirements of the

times have increased, the increased load has been put upon the young child, the representative of the weakest part of life. Thus, instead of lessening his work, the authorities, spurred on by a mistaken sense of duty, have been enlarging it. They have reasoned that because the man must know arithmetic, the young boy must as early as possible take it up; that because the one must know how to spell correctly, the other must as soon as possible load his memory with combinations of sound that usually mean nothing to him; that because the former should speak correct English, the latter must be tormented with the abstract rules of theoretical grammar that never yet have made him see the error of his youthful speech.

As a mattter of fact, the studies should be arranged according to the child's state of mental growth; topics which are beyond his years should be put to one side until such times when he is easily able to master them, and his general work should be made as inviting as possible, rather than the opposite. As an example, one may quote the case of arithmetic, probably the worst offender in the whole list. The intelligent study and comprehension of this subject are obtained only in the presence of considerable

intellectual power of a certain sort. It represents abstractions that are difficult to grasp; and it becomes of use, both as mental training and as matter of information, only when it is plainly grasped as an abstraction. In all other circumstances the act of learning numbers, or arithmetic, is merely memorizing, — a parrotlike performance that is both wearying and debilitating. The child that begins to study arithmetic at five or six years of age really wastes both time and energy for the next five or six years. For if the subject were begun when he had reached the age of eleven or twelve, he would, under proper instruction, progress as far in one and a half or two years as he would under the other plan have taken about seven to accomplish. Here is a clear waste of time, but it is exceeded by the waste of mental energy, interest, and spontaneity, which is of much more account.

Equal fault may be found with the study of grammar. It is too theoretical, too abstract, and, in addition, it exerts no influence on the scholar's language. It is a type of wrong and difficult methods of teaching: the use of the abstract before the concrete has been used and understood. A boy may learn every rule con-

cerning subject and object, predicate and adjective; but the language which he uses will be what he has been hearing. On the other hand, he may be absolutely ignorant of rule or exception; and in the same manner he will take his speech from the people with whom he passes his time. The children of cultured parents will speak correctly and with a good accent; the children of crude parents will speak incorrectly and with a bad accent. And a pile of grammars as high as a house will never change these facts. The only time when the study of grammar may be expected to do real good is when the student is old enough to have an active self-control and analysis, when his self-consciousness is great enough to restrain his acts, speech, and even his thoughts. Then, when pride is awake and ambition is stirring, when self-interest has aroused all the energy of endeavor, the study of grammar may be both profitable and useful. In earlier times it is, like arithmetic, as useless as it is burdensome.

In all likelihood the conservative reformer may find fault with the use of the spelling-book. The learning of the literal composition of a word is a form of memory which is made up of repeated visual and auditory impressions.

Such impressions are most easily received and retained if they occur in connection with known facts and ideas, such as are obtained in the course of reading an interesting narrative; and the hardest way to acquire them is the bare and unassociated act of memory. The act of learning the appearance of isolated words and memorizing the separate sounds that constitute them is a thoroughly laborious one; and the results do not justify the expenditure of time and energy expended. If this study were postponed until the faculty of observation had been fairly well exercised, and until experience in reading had made a comparatively large number of words familiar to eye and ear, the process of knowing how those words looked and sounded would be much more easily and rationally acquired. If we follow such a method of thinking to its application in other directions, we shall be forced to lay less stress than we now do on the early teaching of penmanship according to a rigid copy. When the fingers and eyes are inexperienced and weak, the recognition of the essential points in writing are apprehended with difficulty and expressed very poorly. Moreover, minute and slavish copying is hard on the young child's undisciplined faculties. There

is a general rule in human development which covers the fact that the inhibitory centres are among the latest to attain flourishing strength; if this idea is translated into more common phraseology it might read: the power to restrain comes later than the ability to act or express motion. This statement corresponds to the common experience of children in the hardship of exact imitation of a small copy. Not only theoretically, but also practically, it would be easier for a young child to learn to draw simple and large objects free-hand than to acquire facility in neat and graceful writing.

The study of geography is taken up too early in the routine of school work; and, as a result, the effects which it produces upon the ordinary child's mind is a confused one, a matter of ill-assorted patches. A young boy or girl is unable to appreciate the striking nature of the earth's rotundity, of the correct inter-relationship of parallels of latitude and longitude as depicted on maps, of the physical disposition of land and sea. The usual plane maps mean very little to such a scholar, whose imagination is not sufficiently trained to translate the plane surface into terms of the shape and form of the earth. The boundaries of the various coun-

tries are learned as rigid divisions, in the same artificial way that one house is marked off by its walls from another. No efficient means are generally used to convey a satisfactory conception of these political communities, their distinctive traits, their resources and industries, their physical relations to one another, and the main facts of information concerning their peoples. The true view of a country, in the light of its organic growth, is practically never held by young school children.

It is easy enough to verify these statements. In order to do so parents should occasionally visit their children's classes. I have done this fairly often, and have always had profitable experiences. One of the occasions which impressed me was a visit to a public school in New York City, where I listened to a boy of about eight years, who, in the course of his recitation, said that Pennsylvania was the capital of Philadelphia, and that George Washington was "a brave British general." When the teacher was asked whether that was a type of all the recitations, she retorted, "What can you expect of a child of eight!" At other times and in other schools I have heard recitations that were no more exact, and I have

always murmured to myself the exclamatory quotation given above. Although the illustration may seem an extreme one, nevertheless, it does not misrepresent the mental condition of a large part of the primary scholars in regard to this subject. In some respects it is characteristic of what an observer will meet in most of his visits.

Geography, then, like the other studies mentioned, does not belong in the curriculum of the primary grade. But, if it is to be retained, its present form and method of teaching should be altered. It would be quite in place to teach young children what the physical divisions of land and water are, what the differences in climate are, what the characteristic occupations and manner of life are that belong to each, and what sort of people is to be found in each. All this should be taught in a practical fashion rather than by words alone. If a large room were fitted up to represent continents, islands, peninsulas, oceans, lakes, and rivers; if the different zones were depicted in gross presentments with satisfactory examples of their inhabitants, their occupations, the fauna, the flora, and the distinctive geological formation, the child's mind might be pleasantly occupied, —

as it would be with a story, — and some fundamental information might be imparted that would require comparatively little discrimination, little rote memorizing, and almost no fatigue. Upon such a foundation a solid superstructure of geographical information might be built when the child is twelve, thirteen, or more years of age, which would be durable and at the same time easily reared.

If the ordinarily intelligent parent will take the trouble to examine the course of study in the primary grade, and if he will allow himself to think fearlessly and unrestrainedly, he will soon be convinced that many of the studies may not only without detriment, but also with benefit, be dropped. And when he has reached this conclusion, he will invariably want to know what is to fill the gaps. This is not hard to decide upon, so long as the general condition of the child is understood. One must keep in mind the scholar's disinclination to bear long-continued restraint, his lack of concentration, lack of mental self-control, his inability to deal with abstractions, the lack of the reasoning faculty, his deficient store of memories and associations, and his love of novelty and change. All this would require the teaching to be as little

formal as possible, would diminish the desirability of rigid recitations from memory, would increase the amount of narrative work, and of instruction that was susceptible of the story-telling form. Languages that were taught by the so-called natural method would have a more important place, and would be taken up at an earlier age than is now the custom; and all studies that could be prosecuted in the practical manner which was suggested when speaking of geography, would have a welcome. In addition, some studies should be held out of doors, or on roof-gardens, with which schoolhouses could easily be provided. The teaching should be made a pleasure, a form of instructive recreation, of useful pastime that involves movement, frequent change of occupation and subject, and of the vigorous exercise of the imagination.

In this connection it is pertinent to speak of the ethical and religious, as well as the so-called common education; for it is hard to separate the three, unless one means creed when one says "religion." Ethical training may be regarded as defining the attitude which a person holds toward his fellow-men; religious training as defining the attitude which he holds toward the Deity or his conception of the Deity. The one

is a material relation illumined with a spiritual glow, the other is an expression of a spiritual effort that is dulled and weakened by the material self of the believer. Both are modes of projecting the personality, of expressing a mental impulse which varies according to circumstances of environment and opportunity — possibly of natural disposition. Both have a soft and mellow hue which at times makes it hard to distinguish between them; and under all circumstances the penumbræ which they throw impinge upon one another, causing a blending which cannot be called by one name or another. Under such an aspect they are admirable, most of all when they originate in a spontaneous or purposeful movement of one's mind, which is no more than a reflection of one's best intentions.

Unfortunately, the usual interpretation of religion does not very closely coincide with this. On the other hand, it is often no more than a hard distortion of it, which involves many unfavorable traits in its developed form. And the mental attitude of a child is such as to show these unfavorable traits in a repulsive light. The child is unable to grasp the full spiritual import of religion, he sees none of its possible

excellences of typification, none of its potentialities of endeavor, none of the opportunities of restfulness, of hope, and of satisfied longing. Instead, he grasps no more than a complicated system of admonitions and commands, which is commonly exercised with the expectation of possessing a correctional value. The behests of religion are for him negative in their nature: they prescribe what he may *not* do; and even if they are put in a positive form, they stand for the negation of what he wants to do. His idea of the Deity is a purely anthropomorphic one. He conceives of God as a huge man whose power to punish bad children is frightful, and whose promise to reward good children bears no immediate likelihood of fulfilment in a form that is appreciable. As a result, the control which such an influence comes to have over him may be aptly compared to the terror inspired by a threat to call the "black man," the "big policeman," or the "boogy man." It is a low form of suasion, a confession of inability in the parents to control their child's behavior, and a reliance upon means of restraint that are equally derogatory to them and debasing to him. The forms of religion he regards as a mere show or display, to be put on the same plane as any other exhi-

bition that is attractive when it is novel, and tiresome when it is no longer new. For him the rite of baptism holds no meaning, the elevation of the host — a deeply impressive ceremony — carries no significance; he sees the accompaniments of fine buildings, notable congregations of men and women, and the imitation by all of a formula which he cannot understand.

This factor of imitation is one of the main traits with which we must reckon in our efforts to produce a commendable moral or spiritual tone. This plainly does not apply to the teaching of a creed; for such a matter has no universal truth or fitness. The teaching of one sect is fully as likely to be desirable or undesirable as another. And a formula that fits the needs of one person may bear quite the opposite relation to his brother or his neighbor. Moreover, we can never know whether the creed in question has a final value in the potential development of a certain child, or whether it may not act as a hindrance to him, whether it is not an artificial creation which, in later years, may provoke the sentiments of rebellion, distrust in his estimate of his parents' honesty, and discord with the whole idea of

spiritual control. But in the sphere of ethics, of pure morals, there exists a field for instruction that is perfect in its possibilities. It is applicable to every family, to every community, to every nation. It is the standard of conduct by which the civilized world marks its progress from a lower to a higher grade of organized culture. Above all, it is a code which applies as well to the ignorant as the enlightened, to the adult as to the child, to all creeds and all peoples. It is the gist of all religions, without which they represent no more than a mere shell that is hard, unyielding, and unpalatable. A child may be unable to appreciate the esoteric symbolism of the immaculate conception, or the Trinity, the doctrine of total depravity, or the regenerating power of baptism; but he surely is capable of knowing the import of the golden rule, of mercy, of charity, of good intention, of honesty, and of kindly deeds. He may be infinitely far from highly appreciating the worth of a torturing hell, of infant damnation, of eschatology, of demonology, or angelology; but he certainly, and without much delay, can recognize the power of virtue, of forbearance, of loyalty, of truth, and of modesty. The one is an abstraction which belongs to a later age,

when the reason should make its choice of beliefs that are to act as the immaterial guide to a definite tendency of spiritual life. The other is or may be represented as a concrete formation of acts that may be learned as any other method of conduct, the repeated performance of which inevitably tends to create a mental condition that is its analogue.

And one of the principal advantages of such training is the necessity of the parents and guardians to live up to a similar standard. Such conduct is learned by example and practice more than by preaching. A man may be a pillar of the church, but if his daily life is not entirely in accord with his theoretical professions, he will create upon his child the bad effect of insincerity in place of the desired effect of holiness. This is undoubtedly at the root of the strange and seemingly unnatural deviations from a much emphasized plan of life, which every one has noticed in the families of certain ministers and other pious people. The parents may be good enough men, as men go; their professions and public acts may be highly commendable, and to the eyes of their little world they may seem to be models of thought and action. But in their private and intimate

lives one usually may find the elements of cant, of insincerity, of make-believe, of a weak grasp on material and immaterial things, of mild regrets and halting endeavor.

This brings to a clear focus the idea of educating a child. It is not necessary to cram his head with many facts, most of which he cannot use, and for which he is not prepared. Nor is a rigid curriculum, which may merit our respect on account of its antiquity, necessarily the best. Most of all it is futile to gauge a child's needs by an adult's. The child's business is no more than to prepare for his work and his struggles in life; but the adult's is to grapple with the work and the struggles in an aggressive, masterful, and intelligent manner. The best foundation for an efficient training is the possession of a vigorous mind and body that have not been divorced from their native strength by artificial methods which have been devised upon a misapprehension of what the child's condition really is. The child should not be forced into a Procrustean mould; rather he should be nourished, he should be strengthened, and his budding functions should be guided within the limits of their own natural channel. His imitative faculty must be used instead of his

reason; for the former is present from the earliest age, while the latter is the gradual growth of his later development. The education of a child, considered from this standpoint, means the continuous education of every member of the whole race. It stands for the development of every better feeling of which man is capable, of the self-restraint that marks him off from lower orders of animal life, of the hope, and the living in the future, that is an index of his best aspirations. The true teacher is the parent, who should be as unwilling to resign this function as he would to lose his most precious birthright. Parenthood includes within its wide confines the teacher's place as surely as it includes the generator's, the protector's, and the advisor's. And too much may not with safety be left to bought assistance.

CHAPTER XII

DEFECTIVE CHILDREN

It would be out of place in a book on the care of the normal child to describe and discuss all the marked deficiencies which exist in idiocy, insanity, and radical perversions from the normal; but between the two extremes there are a large number of degrees of imperfection which are commonly misunderstood, neglected, or hidden. Indeed, one might truly say that parents can have no logical idea of what a normal child is unless at the same time they possess some knowledge of what is meant by abnormality. This is a matter in which the greatest frankness should be used; for in order to correct the deficiencies, one must thoroughly understand their causation, nature, extent, and probable outcome. It is undoubtedly true that most families that have a deficient child hide the fact as much as possible, believing that by such means they are preventing the outside world from interfering with his future work

and prospects. Most of all, they fear that the reputation of having a defective in the family would interfere with the estimation in which the world holds the other children, would diminish their opportunities of forming advantageous commercial and matrimonial engagements.

This wish for secrecy is its own worst enemy. It perpetuates a blind belief in the unchangeable nature of a defect, of its probable existence in the whole family, of the likelihood of its reappearance in offspring. Moreover, it deters from seeking advice and relief, and of necessity causes the condition to remain unchanged. This is infinitely unfortunate, for there is no doubt that many of the defects and their sequels can be ameliorated, even if they cannot absolutely be cured. The methods are not generally understood, for the double reason that too little discrimination is commonly employed in ascertaining the cause and the exact amount of damage, and because the treatment is neither radical nor startling, but slow, long drawn out, and, possibly, discouraging. Nevertheless, so long as there is a rational hope of ultimate improvement, the parents have a duty to perform in using every possible means to obtain it.

In trying to understand the facts of physical and mental defectiveness, one must, first of all, recognize its modes of occurrence. The injury may be congenital or may occur after birth. The congenital cases include microcephalus, hydrocephalus, cretinism, birth-paralysis, general disturbance of nervous equilibrium, and a wide range of intellectual hebetudes associated with the tuberculous diathesis, or certain low forms of development which are known by the name of "mongol" or "kalmuc." In microcephalus the brain is much smaller than usual; its arrangement of convolutions is too simple, and its texture is doubtless coarser than it ought to be. The skull is small, it tends to come to a point at the top, and possesses a receding forehead and a flattened occipital portion. The chin, as a rule, recedes sharply, and the general expression is one of vacuity and weakness. This condition has no sharply defined limits, but exists in so many grades that not a few microcephalic children are susceptible of enough improvement to give them a bearable position in the world. Under this heading one would place those children in whom some part of the brain is absent, atrophied, or impaired. The scope is thus very wide, and actually should be

made to include persons who are said to be "slightly backward," "not over bright," or "simple-minded."

"Congenital hydrocephalus" means a brain that at birth contains a relatively large quantity of water or serum. The head is large, especially above the upper level of the ears, the forehead is high and bulging, the occipital portion may be notably increased, the fontanelle remains patent, and the bones of the skull are very soft and yielding. The abnormal amount of fluid causes general pressure, retards growth, inhibits nutrition, and prevents normal functioning. The result is a curious combination of a huge head and a really small brain. Associated with this deformity is a general weakness of the body, a liability to wasting diseases, and a comparatively small resistance against convulsions and other cerebral symptoms which are due to pressure.

Cretinism is a remarkable condition which occurs endemically in certain localities of Switzerland and France. In the last few years an increasing number of cases have appeared in this country. The disease is associated with an atrophy or absence of the thyroid gland, and has as its apparent symptoms a dwarfing of the

body and mind, thick and flabby skin, a protuberant belly, a large and projecting tongue, broadly set and full eyes, undeveloped face, and thick cranial bones. The subjects of congenital cretinism do not seem to have much vitality, and easily fall into conditions of marked weakness. The sporadic cases are oftener seen in this country than the congenital, and have a better chance of life. But the general dwarfing is fully as marked in the former as in the latter, so that a cretin of twenty years of age may look no more than six, eight, or ten years old. In all these cases the wonderful improvement which modern methods of treatment have made possible is a standing rebuke to those who despair of helping defectives.

Birth-paralysis results when some part of the body has, during or shortly before parturition, been subjected to long-continued pressure. There is a widespread belief among anxious mothers that the obstetric forceps is responsible for a large proportion of these unfortunate conditions. As a matter of fact the opposite is true. The instrument shortens the duration of tedious labors for hours or even days, thereby reducing the amount of danger. Moreover, if it is properly used, the amount of strain which it puts

upon the child is not great enough to be injurious. A labor that is long drawn out, that depresses the mother's physical resources to or past the point of toleration, has an equally bad effect upon the child. And he will feel these unfortunate conditions in proportion to the weakness and immaturity of his organism. In the obstetric forceps we have an immediate means of relief, whose value cannot be too highly estimated.

The tubercular diathesis is responsible for a large proportion of the deficiencies in children. The process is one of general impoverishment, of weakened cerebral circulation, of depraved nutrition. There is no classic form which it assumes, nor is there any limit at which it must necessarily stop. Just as the arms and legs may waste away, the power of digestion diminish, and the general vitality sink to a low level, in the same way the mental force may decrease until the intellectual status is a pitiable one. In somewhat analogous ways a defective circulation, which is dependent upon some form of congenital heart disease, may occasion an impoverishment of the cerebral tissues that shows itself in some degree of feeble-mindedness as well as muscular weakness. Yet another

type which doubtless originates in perverted or deficient nutrition is the so-called mongol or kalmuc; it gets its name from the resemblance to the designated races which the facial appearance suggests, and may be regarded as an instance of arrested development. The head is not large, and the transverse diameter is almost as long as the longitudinal. The eyes are apt to be obliquely placed, and shaped like an almond; the hair is harsh and wiry, the skin is coarse, the tongue is rough and marked by transverse furrows. Such children represent a condition of general incompleteness, which may be illustrated in a partial way by such local deficiencies as cleft palate, hare-lip, and the many rarer deformities that result from unfinished growth.

Under the heading of non-congenital deficiencies, the main causes of impaired growth are the results of violence, disease, nervous shock, and serious or long-continued poisoning. The traumatic cases may follow a blow or fall on the head or spine; those dependent upon disease are the ones that have suffered from meningitis, scarlet fever, and other disorders that may affect the brain and its membranes, as well as the organs of special sense. Nervous shock may follow marked terror or fright, such

as is produced by ghost stories, imminent injury, pretended apparitions of the "boogy man," or even confinement in the dark. The philosophy of these cases is hard to understand, especially as we have no standard by which to ascertain the amount of disturbance, nor even do we know in what organic changes that disturbance resides. We are in an almost equally poor way concerning the so-called toxic cases, such as follow a large use af alcohol, opium, and other powerful drugs. And the most that we can safely conclude is that in some way the circulation is weakened, nutrition becomes perverted, and local or general starvation follows.

When we look at these conditions in large numbers, we are generally able to recognize some common factors which may reasonably have acted as the exciting and active cause. And there is a great need for a clear view of the subject in order that the blame will be rightly placed, and also that there shall not be a false opinion hanging upon the efforts to improve or cure. For such a reason there is some keen pleasure in being able to condemn the likelihood of "maternal impressions" having an appreciable share in the causality. The tenacity with which this reputed factor main-

tains its hold upon the popular belief and imagination is truly remarkable. And at the same time there are almost no good reasons to fortify the belief. If it were possible by a single impression upon the mother's mind during the period of pregnancy to give an enduring character to the child's body or mind, or both, an easy way would simultaneously have been discovered to influence every unborn child. If the sight of some startling animal, the news of some striking event, the appearance of some unfortunate cripple, can blight or harm the fœtus, why should it not be possible to direct one child to be a musician, another to be an orator, another to be a mechanician, by allowing the mother to hear respectively a burst of music or a powerful speech, or giving her the opportunity to witness a fine piece of mechanical ingenuity? Since in every household the business of the family head is apt to take up a large part of the wife's attention and thoughts, there ought to be as an inevitable consequence an almost certain bending of the children's minds in the way of the father's business. But as a matter of fact we know that a minority of all children adopt their father's vocation; and when they do, it is rather because of unusual

advantages which the inertia of the parent's success may give them than a congenital liking. Let us go yet further and inquire whether, even in cases of marked preference of the parents for a certain business or profession, the children do not show a smaller amount of love or ability for the work in question? Perhaps of all vocations the one that tinges most strongly every circumstance of the family's household and general life is the ministerial. And yet it is comparatively rare to find a preacher's son loving the life and work of a preacher, and longing to adopt them. Indeed, in the various callings it is a comparatively common thing to find that a man's family evince no taste for his occupation, or at most that their approbation is no more than toleration.

The plain fact is that the whole subject of parental impressions is very misty, without well-defined limits, or clearly understood laws. Vigorous parents, who are well nourished, are very likely to bear vigorous offspring. And persons of weak vitality, especially if they are poorly nurtured, generally have weakened children. We are able to hand on to our children a legacy of our physical constitution and peculiarities, or those of our ancestors; or possibly

the combination of the innumerable factors in heredity may give a resultant which is different from any one of them. The main element in all cases is the quantity and quality of nutrition; and the influence of adventitious effects lies in the way of increasing or decreasing that nutrition, of keeping it within straight or crooked lines. It is not radically different from the manner in which children may be manipulated and influenced after birth.

Maternal impressions usually come in the form of a single thought, or perception, or shock; but we rarely find that such a single event can do much toward making or marring the mind of a child. If the opposite were true, it would be hard to find a normal or healthy person; for the exigencies of ordinary life make the occurrence of some sort of shock or undesirable maternal impression practically unavoidable. "So strong, indeed, is the tendency of nature to revert to a healthy type, that the solitary infraction of physiological law is not often visited by the penalty of mental abnormality; and if we only look back far enough we shall probably find that such a culmination is reached by the gradations of repeated transgressions." This statement bears at once a hope and a warn-

ing. One single act may not be exceedingly important in itself, but that act may be the individual expression of a general tendency which must, with each repetition, exaggerate the tendency to recurrence, or the producing of the characteristic effects.

This idea is regularly proved in our common experience. We know quite definitely that a tuberculous ancestry diminishes a child's vitality to such an extent as to create a predisposition to contracting local or general tuberculosis; at the same time we know that a single instance of tuberculosis in a father, or mother, or grandparent, does not inevitably assure the breaking out of the disease in a child or grandchild. Likewise, although we know that a majority of defective children have a history of tuberculous ancestry, the fact of a single case of the disease does not at all mean that every child who descends from such a stock must be feeble or abnormal in mind. And, also, in the same way that we know the possibility of building up and developing the body of a child with a tuberculous predisposition, so, likewise, we may reason that the weak-minded offspring of a family which is similarly contaminated may be carried past the limits of

intellectual poverty into the confines of comparative intellectual prosperity.

Almost the same train of thought applies to the defectives whose disabilities have been traced to parental or ancestral tendencies toward drunkenness. "Not every drunken parent procreates an idiot; but when inherited nervous instability from this or other causes is intensified in the next generation by injudicious marriage, or by unfavorable environment, instances of mental degeneracy are apt to occur." A single occasion of excessive drinking would in all probability have very little to do with depressing a future child's mental or physical constitution; but habitual excesses, in parents or ancestors, or even the habitual use of alcohol to more than a very moderate degree, might bring about the most unfortunate results. If it did occur, the rational cause would not be the mysteriously blighting effects of alcohol in itself, but rather the gradual and steady deterioration of nervous equilibrium which excesses entail. Since the use of alcohol lends itself easily to excess, — more so than most drugs or foods, — inordinate and unusual drinking has come to bear its present bad reputation.

In analogous ways unfortunate circumstances

during gestation, such as poor maternal health or a violent accident, may operate. These factors are efficient only in the degree in which they are able to lower the child's nutrition, as well as the source from which that nutrition has its origin. Similarly we can account for the occasionally evil results of consanguineous marriages: here the simple fact of relationship is not the all-important consideration. In fact, there are many instances of comparatively close intermarriage, such, for instance, as those of first cousins, whose offspring have been sufficiently normal. But such marriages have a tendency to exaggerate whatever weaknesses of body or brain and whatever environmental peculiarities the family may have.

Quite a different principle comes into play when the deficiency follows disease. Here an inflammatory process is at work which causes organic changes in the nervous system. Thus a lobar pneumonia may be followed by a meningitis, and on account of it the meningeal membranes may be thickened, their blood-vessels may be congested, the products of inflammation may accumulate in considerable amounts, and, consequently, there is a continuous nervous irritation, the normal development is impeded,

and symptoms of corresponding intensity may appear. In an entirely different set of cases a new growth, perhaps of syphilitic origin, may press upon the surrounding brain tissue; or, again, a minute fragment of bone, which has been broken off by some accident, may pierce the cerebral structures, and cause mental deficiency, convulsions; and similarly alarming manifestations. It is obviously unnecessary to go through the whole list of possibilities and all their myriad aspects; the great thing which we must keep in mind is that commonly enough there is an ascertainable cause, and that the finding of it is the first step to a logical method of improvement. Likewise, as the knowledge of cerebral localization and functions grows, there is an increasing chance of knowing what area is affected, of finding means to increase its efficiency, or so far developing some other portion that it may, in part at least, attend to the neglected work.

The outlook, in all these various cases, differs according to the particular circumstances involved. As far as a very general rule may go, one may safely say that the congenital cases offer a better opportunity for successful treatment than the acquired ones do. For in the

first class there is generally an unfinished condition, a state of incompleteness, that is, as it were, waiting for an adequate force to give the needed impetus toward normal growth. If the weakened brain has not been allowed to remain too long unhelped, there is a distinct possibility of improvement. On the other hand, the second series presents a more discouraging state of affairs; for instead of there being merely a negative condition, there is a positive organic change that may be almost insurmountable. Nevertheless, expert information should be obtained in regard to every case, and under no circumstances should any deficiency, excepting capital ones, be accepted as irremediable.

Thus, as an example, let us take the case of a young child who has been afflicted with deaf-mutism after scarlet fever. A part of that disease is a severe inflammation of the throat. As a sequel to this disorder an inflammation of the Eustachian tube may begin, which develops into some form of middle-ear disease, the result of which is deafness. The child, consequently, is unable to hear himself or other persons speak, he forgets the sound of words, and, finally, is unable to use them at all. In children under two years of age, the normal limit at which

speech may be expected, the sounds may never have been sufficiently learned, so that deafness even more readily than in older children causes mutism. Such patients are often thought to have suffered an injury to the brain; but as a matter of fact the trouble is a purely local one, and may occasionally be relieved or compensated for by appropriate special instruction, or, in some few cases, by treatment of the ear. This is by no means the only instance in which a hopeful persistence may be of the greatest benefit.

It is unfortunate that most cases of defective mental condition cannot be treated at home. As a rule, the treatment is so wide, it should include the oversight of so many parts of the child's life, that observation and control must be undivided. And each factor may be so important that it should not be left to the liberal interpretation that it usually would receive in the ordinary household. Moreover, such a household is primarily designed for the needs, comforts, and pleasures of normal persons; it can only with difficulty subordinate its natural usefulness to the needs of an abnormal child. These needs are incessant, they must be watched day and night. Thus the diet in such cases is very important, for a poorly developed or weakly

balanced brain is more easily affected by an imperfect digestion and assimilation than a normal one. The exercise is likewise very important, and must be designed for the particular child in question. The instruction must by all means have the special character which the condition of the child demands, and it should be prosecuted under the direction of expert medical, as well as pedagogical, control. Even the child's amusements should be carefully regulated and prescribed. In fact, there is no item of his whole existence that is too small to require careful and conscientious direction.

The ordinary nurse-maid is unable to do all this intelligently and faithfully. In most cases she is a somewhat rudimentary person herself, whose real and suitable function would be as the keeper rather than the nurse of children. While it is true enough that most children would be benefited by having less expensive clothes and a better qualified nurse, nevertheless, in a case of a defective child the requirements are so great that a capable person is under ordinary circumstances very hard to obtain. The natural choice must therefore be some form of institution which may not have the disadvantages of the usual large asylum in the

great cities. The proper institution must be situated in the country, in a community of its own; it must be built on the cottage or colony plan, where only a small number of children live in one home, and, therefore, are under the direction of one cottage-mother. The amusements, the exercises, the instruction — in fact, the general life of the child — should be passed, as far as possible, in the open air under circumstances which do not bring abnormal children in competition with normal boys and girls, which would allow an elastic grading, which would decrease to the last degree the morbid influences that are inseparable from the stress and strain of ordinary life. In addition, the corps of attendants and instructors should be selected for the especial work in hand on other principles of choice than those which unfortunately are too often in vogue. The abnormal child is so frequently met, he represents under present conditions so much of a loss to himself and the world, and his prospects of usefulness are so limited, that any change is apt to be for the better. And if the improvements are able to elevate the condition of only a small percentage, the gain to the world would of necessity be immeasurably great.

CHAPTER XIII

COMMON DISEASES

No child can be expected to go through life without some deviations from the normal condition of health; and a general understanding of how the main deviations show themselves is of so much help in obtaining a return to health that every mother should have some information on the subject. It is not desirable that she should make an absolute diagnosis and conduct the treatment without skilled help; on the contrary, no matter how much experience she may have had in her household, she cannot expect to have the acquaintance with sickness that a trained physician possesses. At the same time there is a very important place in the care of children for the intelligent mother who has sufficient knowledge to prevent her from falling into simple errors, to give her the calmness of mind in the presence of disease that is so valuable for her child's comfort and welfare, and to contribute to her own comfort, efficiency, and

ability to care for her household. There are the best of reasons why she should have some general knowledge of the principal varieties of sickness, how they occur, what their general course is, and what the logical way of regarding them is. The knowledge is not especially hard to assimilate, and it will undoubtedly justify itself.

The first thing to know and always to keep in mind is that disease never comes without a definite cause, it never "happens." A child may fall and break his arm, or may be struck with a ball or a stone, and thus injured; such accidents may occur to any one, even if every reasonable precaution for his safety has been conscientiously observed. But the disorders known as definite diseases do not happen in this manner; in a large majority of the ordinary cases sickness results from the combination of two factors: a lessened physical resistance and vitality in the child on the one hand, and, on the other, the attack by agents of disease that are lying in wait for the opportunity to find suitable conditions of growth. The deficient resistance and vitality may be congenital or acquired, but usually they arise from errors in the general mode of life, or in the failure to obtain

the requisite degree of health after sickness. There is no doubt that some children have received the heritage of weakness, of susceptibility to pathological conditions; but such children are in the minority. Even in the case of the diseases that were commonly supposed to be hereditary, the fulfilment of the sinister promise is often the result of personal circumstances. No disease has had a worse reputation in this respect than tuberculosis. It has been so widespread, so persistent, and so merciless, that its occurrence in one member of a family threw a shadow of doubt upon the physical stability of every other member. It may have appeared as pulmonary consumption, as scrofula, as disease of the bones; but under all circumstances it has cast a blight upon the confidence which the affected families had in themselves, as well as that which the public had in them.

As a matter of cold fact, the heredity of tuberculosis has of late years been doubted and practically disproved. And we have found that the whole of the matter is contained in the word "predisposition." The child of tuberculous descent is not born with the germs of the disease in him; but his forbears, on account of the ravages which the disease accomplished in

their bodies, have handed on to their offspring a weakened vitality, especially to the disease in question. The tubercular condition has subtracted something from the sum of their physical assets, and they bequeath no more than they possess. But — and this is a factor of mighty import — the human organism has a wonderful quality of elasticity, a natural tendency to revert to health, as in a staple commercial enterprise the natural process of physical development always leans toward improvement, toward recovery from misfortunes, if abnormal losses are curtailed. Thus, although a child may be born with a tuberculous history, he is almost always susceptible of such development of health and strength that his predisposition will be overcome, and he will go through life unscathed.

The same idea is true concerning other diseases which are commonly regarded as hereditary. People at large are very apt to regard such disorders as cancer, as insanity, as rheumatism, as heart disease, in the light of family failings which necessarily constitute a standing menace against the health and the potential activity of each individual concerned. But this is not the best way of regarding these

complaints. At their worst they can leave no more persistent trace than tuberculosis, which can be guarded against and overcome. In all these instances a hopeless pessimism is entirely out of place. There is, very probably, a weakened general resistance, or a weakened resistance to the attacks of the disease in question. But that fact should stimulate the affected families to vigorous efforts whose object is the attainment of such robust health that the individual as well as the family weakness is practically obliterated.

The second factor in the causation of disease is the one of outside agency. This is usually of one sort, although it may have many phases. The deleterious influence of unfavorable environment is so well known that it scarcely needs elaboration. Everybody is so thoroughly acquainted with the ordinary effects of injudicious eating and drinking, poorly arranged clothing, irregular habits of rest, recreation, and activity, and deficient measures of hygiene, that an extended mention of them is unnecessary in this place. But another phase of the question — that of the invasion of germ life or the micro-organisms of disease — is not so clearly understood. These bacteria are, for the most part, exceedingly

low forms of animal life that exist in great quantities wherever civilization flourishes. There is a vast number of these organisms, some of which are of use, some of which are harmless, and some dangerous to life. The useful ones may be concerned in those processes of fermentation which are so extensively employed in many commercial and domestic activities; the harmful ones are active causes of disease. The one sort may be concerned in the making or the marring of food-stuffs; the other in the destruction of tissue or the production of poisonous matters or toxines, the objective manifestations of which we call the symptoms of disease. But with all of them there must be certain attendant circumstances, the existence of which precedes their development and growth. These are the presence of moisture, warmth, and a suitable culture ground.

In the human body heat and moisture are always present; and the suitable culture medium exists in some condition of local or general loss of vitality or tone. The body when in a perfectly healthy state has a wonderful faculty of warding off disease, because it has a quality which does not allow the peculiar reaction which makes the favorable

culture medium. A really healthy person does not contract consumption, or typhoid fever, or measles, or erysipelas, or lobar pneumonia; not because he escapes contact with the provocative germs, but because the condition of his body does not favor their growth. A person whose general strength is intact and whose respiratory mucous membranes are quite normal is in no danger of consumption; a child who is similarly disposed, whose nutrition is unimpaired, whose excretion is normally active, does not contract whooping cough, scarlet fever, or mumps; a baby whose vitality is not depressed, whose alimentary tract is in a vigorous, healthy condition, whose food is properly controlled in regard to quality, quantity, and purity, and who is kept sweet and clean, has no likelihood of suffering from sprue, stomach troubles, summer complaint, or cholera infantum. The equation is one that is not hard to understand, for the factors are quite evident. And where the pathological process has once begun, no one is able to say where it will stop.

The characteristic effect of all these diseases is the production of some sort of poison, which varies according to the manner and source of

its production and its particular nature. The toxines that are developed during an attack of diphtheria are quite different from those which follicular tonsillitis produces, and the poisonous effects of typhoid fever bear very little relation to those of summer complaint. This, naturally, does not prevent two or more of these diseases and their respective toxines from being simultaneously present in the body, and they often are. Thus it is no very rare thing for typhoid fever to be complicated by pneumonia, or diphtheria by broncho-pneumonia, or lobar pneumonia by meningitis. Indeed, the presence of one disease, by weakening the body's vital tone, makes the process of contracting further diseases more easy than it otherwise would be. And at the same time one can easily see that the outlook, on account of the added wear and tear, is correspondingly more gloomy. But the essential nature of these various infections is so different that attempts have for some time been made to find whether one might not be used to antagonize another. So far this line of work has not been very successful.

But another method of treatment has been discovered which in the future will unques-

tionably be developed to wonderful limits. This method recognizes the poison as the main part of the disease, and regards the external symptoms as merely concomitant facts. Under the name of the "antitoxic serum" the world has become familiar with this view in the treatment of diphtheria. The philosophy of it is seemingly simple, and consists in the effort to familiarize the body with the specific toxines by means of injections of them in an attenuated form. Diphtheria is not the only disease in which it is being used. For generations we have been employing an analogous treatment, which is called vaccination, to ward off the possible attacks of smallpox. And of late, intelligent efforts have been made to produce antitoxic serums for lobar pneumonia, tetanus (lockjaw), yellow fever, erysipelas, blood poisoning, and similar diseases. The success has been variable, depending upon the ability to obtain the specific micro-organisms in pure cultures, upon the experimenters' ability to obtain suitable culture media, and other related facts in the technique. The main idea that is of use to us in this connection is that most diseases have as their principal factor the direct or indirect production of toxines or

poisons which have a dangerous effect upon the body in proportion to their virulence.

The lesson is of universal application in the treatment of disease, and applies with the greatest force to the care of children. In all their sicknesses the first step to take is the thorough emptying of the stomach and intestines by means of cathartics; and one of the principal details of treatment is the use of such medicines and therapeutic measures during the process of the disease as will keep up a moderate but effectual excretion through the lungs, the intestines, the kidneys, the glands, and the skin. Excretion by means of the lungs is promoted through the inhalation of pure air, and the action of a vigorous circulation; that by means of the intestines through medicines, special foods, and water; that by means of the glands through medicines; and that by means of the skin through medicines, the action of heat, and the use of water. It is obviously impossible to define and describe all these various agencies, for that would be tantamount to converting this book into a treatise on *materia medica* and the practice of medicine. But out of the mass of details we may select a few fundamental facts in treatment that are of paramount importance

in the task of restoring ailing children to health.

All medicines should be as few in number and as simple in combination as possible. All opiates should be used for children with great caution, and opium or its derivatives — such as morphine — should practically never be used, excepting under unusual circumstances where a physician believes them necessary. This rule applies with especial force to the employment of sleeping mixtures, soothing syrups, and teething syrups which depend for their effect upon brutally stupefying the child, without regard to the serious consequences that the drugging may entail.

In sickness the food should almost always be fluid, should be easily digested, and never given in large amounts. It is well to remember that the amount of nourishment which the child obtains from his food depends less upon the quantity which he swallows than upon the amount which he digests and assimilates. The habit of forcing a child to eat against his will is thus a bad one, for he is rarely benefited by food which he does not care to take. During an acute sickness he does not need a great deal of nourishment; and in chronic disorders one

can manage by means of tonic medicines, a good choice of food, as well as a dainty preparation of it, to increase his appetite. It ought not to be hard to understand that food may have as definite a composition and physiological effect as drugs, and that a similar care should be employed in its use. Under all circumstances the attending physician should be asked to specify the exact kinds of food, the manner of preparation, the quantity, and the intervals of feeding. This is fully as important in most cases as the giving of certain prescriptions; the whole question of diet for ailing children has not been receiving the serious attention which it merits.

Another subject which is almost equally important is that of bathing and the action of water in sickness. The use of this agent is not nearly common enough, nor need it be regarded with the distrust and apprehension that solicitous mothers so often feel in connection with the treatment of a delicate child. It provides our most excellent methods of lowering a high temperature, very much better than any coal-tar product or fever powder that has ever been dispensed. It is almost as good for raising a subnormal temperature; and at the same time it is noticeably useful as a diaphoretic, as a means of

relieving local congestions, as a controller of defective circulation, and as a capable agent of stimulation. In any sickness the treatment may well begin with the administration of a warm bath in addition to the cathartic; and thereafter the child should be regularly bathed at least once a day. The details of duration of bath, temperature of the water, and solution of medicinal substances in the water, will be included in the directions of the attending physician. During the course of the sickness no other means will give the same satisfactory results in the reduction of temperature; and the graduated bath of 100° F. reduced to 80° F., the cool sponge bath, and the wet pack will always give far better results than any other antipyretic. In addition, the value of an ice-bag to an aching head, or to a nervously excited heart, is too well known to need special mention. Likewise, hot-water bags or bottles to the extremities are both valuable and comforting when the child is suffering from a chill or from a poor circulation. Even in the eruptive fevers or in diseases of the lungs, the daily warm bath will contribute ease, comfort, and a more rapid progression toward health.

In considering the ordinary diseases to which

children are subject, one inevitably divides them into a few distinct groups, according to the functional divisions of the body. Such a view is very useful in determining the treatment which they should receive. For usually a disease cannot be regarded as a distinct entity and separated from every other disease. Thus the disorders of the alimentary track include those of the mouth, the stomach, and intestines; and commonly one leads to another. A child may have an attack of sprue or thrush which always begins in the mouth. It originates in a lack of cleanliness, and if the defect is not remedied the parasitic growth may spread to the stomach, and convert a trivial disorder into a serious one. In the same way, the disorders of the stomach may, and commonly do, lead to derangement of the intestines. And it requires no more than a cursory view of them to show how true this is.

Most of the gastric disorders in children are functional; that is, they result from interferences with the normal work and action of the organ, and occur without the presence of definite organic changes. As an example, let us take the case of an ordinary attack of indigestion. Such a state generally follows overeating, or eating food which the stomach is

unable to digest. In well-grown children it commonly follows excesses such as are committed during holidays, parties, large dinners, or any occasion when they are allowed to eat cakes, pies, fruits, and candies. In infants it may be caused by excessive quantities of milk, or milk of an improper composition. The food, not being changed and absorbed, remains in the stomach, irritates it, undergoes fermentation and putrefaction. From this process poisonous products are formed which bring on various degrees of intoxication. Consequently we see such symptoms as gastric pain, fever, lack of appetite; the organism tries to free itself from the harmful influences by vomiting or even by diarrhœa. And this immediately suggests the proper treatment, which accords perfectly with the general principle mentioned above. Our first duty is to stop the food, to give liberal cathartics to clear away the offending matter, and then to keep the patient as quiet and the nourishment as simple as possible in order to allow him to regain his physical tone. The fever may be safely and efficiently dispelled by baths; and in many cases very little or no additional treatment is required.

In a comparatively small proportion of cases there is a real inflammation of the mucous membrane of the stomach. Here the pain, vomiting, fever, headache, and prostration do not come on so suddenly, but rather result from repeated attacks of functional disorders, or possibly from the absorption of notable quantities of toxic materials. Although the disease is comparatively severe and prolonged, nevertheless the treatment is to be conducted on similar lines. The organ is to be thoroughly emptied, the diet is to be restricted to such easily digestible foods as milk, or clear soups without fat. The same principles of rest and temperature-reduction hold good in this case as in the other; but there may be a necessity for the employment of other methods. It may be necessary to wash out the stomach, to prescribe bismuth, or dilute hydrochloric acid, or an alakli, such as the bicarbonate of soda. These agents need the experience and skill of a physician, and never otherwise should they be used.

The disorders of the intestines may likewise be functional or organic. The first may follow similar conditions of the stomach, may originate from analogous causes even when

the stomach is not involved, or may result from germ infection of the intestinal contents. The course of the disease is apt to be longer than that of gastric disorders, partly because the condition is of slower growth, and partly because the intestines are hard to clear out. The same general plan of emptying the intestine by means of cathartics is used, and sometimes is supplemented by washing or flushing the lower bowel with a large quantity of boiled water by means of a rubber tube and a fountain syringe. This is the main part of the treatment in the summer diarrhœas of children; but it may be aided, and its benefits increased, by the restriction of the food to clear soups and broths, and the administration of bismuth and tonics. In these conditions the need of tonics is unquestionably great, for the loss of flesh and strength is always marked. Full baths or sponge baths are of use, but all further details of treatment must be supplied by the attending physician.

The organic diseases of the intestines are commonly called inflammation of the bowels, and are very serious diseases. Not only is the digestive and excretory function seriously interfered with or abolished, but also there is a very large amount of pain and prostration. The

intensely sensitive intestinal walls are swollen, congested, and infiltrated with new elements; and every movement of the body and every bit of motion which the intestines undergo produce keen agony. The treatment of these conditions is too complicated to have a place in this chapter. The inflammations of the peritoneum, or membrane which lines the abdominal cavity, are of much the same nature, they have somewhat related symptoms and treatment, and likewise are scarcely susceptible of interesting exploration for the general reader.

So much of late years has been said about appendicitis that some description of it is desirable. It is commonly spoken of as a "new disease"; but in reality there is nothing new about it, excepting that we are now able to recognize and treat it, while formerly it ran its course unrecognized. The appendix is a small process, shaped like the finger of a glove, which is given off from the large bowel. It is a blind pouch, situated in the lower right side of the abdomen, and is evidently a vestigial structure which serves no useful purpose. On account of any injury from violence, or the irritation of intestinal contents, it may fall into a state of inflammation. This condition constitutes a fer-

tile culture ground for germ life, the natural outcome of which is the production of pus. If this happens, one of two things occurs: the abscess may be shut in by adhesions, and may gradually be absorbed; or it may break, and flood the peritoneal cavity with pus. From the first condition the patient may recover, but the disease will in all likelihood occur again and again until the second condition exists. The usual outcome of this is death. The disease should be regarded as an internal abscess which, if it is allowed to break, causes an active blood-poisoning. Every abscess, no matter where it occurs, demands opening and the draining off of its poisonous contents; and in appendicitis there is no exception to the rule. In case the abscess is shut in by adhesions, the operation may be postponed until the first acute symptoms have passed. But then it should be performed without delay. The removal of the appendix is always a conservative matter, for it removes a danger whose gravity cannot be well overestimated.

Another group of organs which is the seat of many common disorders is the respiratory system. This includes the nose, larynx, trachea, lungs, bronchi, and pleura. The purposes and

physical conditions of this system naturally control the disabilities to which its various parts are subject. Its work consists in drawing into the intimate structure of the lungs a certain amount of air, from which the oxygen may be taken, sucked through the wonderfully fine blood-vessels into the blood, where it burns up the impurities, and allows the blood stream to return, cleansed and rejuvenated, to the heart. In the nose the air is filtered and warmed; it is conducted by way of the throat to the trachea or wind-pipe, then to the large bronchi, which divide into progressively small ramifications that resemble the branches of a tree. In the throat there are two glands called tonsils, and in the back of the nose is a third one, called the pharyngeal tonsil, whose function is to lubricate the surrounding mucous membrane. These tonsillar tissues may become enlarged as the result of atmospheric irritations or the action of disease, so that the available space through which the air passes is markedly decreased. The enlargement of the throat or faucial tonsils is familiar to every one; but that of the third or pharyngeal tonsil, while it occurs frequently, is not by any means so well known. One is very apt to be accompanied by the other.

At all events, the inevitable result is that the amount of air that reaches the lungs is diminished, the oxygen is correspondingly decreased in quantity, and the burning up of impurities in the blood is lessened in equal amount. Here, again, we come to a condition of intoxication, of poisoning, which shows itself in poor nutrition and development, in lessened resistance to disease, in abnormal conditions of mind. Some of the apparent symptoms are tonsillar hypertrophy, and especially the enlargement of the pharyngeal tonsil, mouth-breathing, snoring during sleep, broadening of the bridge of the nose, and a constant recurrence of coughs and colds in the head. There is one and only one sure remedy for this condition — removal of the offending growths.

There is a certain disease of the faucial tonsils that is sufficiently interesting to require a special mention; and it acquires a part of its interest from its liability to be mistaken for diphtheria. This disease, on account of its manner of occurrence, is called follicular tonsillitis. At the beginning the follicles become deeply inflamed as the result of germ infection, and their mouths are filled with small plugs of membrane. The tonsil now looks

red, large, and studded with small patches or dots of cream-colored membrane. If these patches are large in number they may coalesce, and form a continuous membrane. The behavior of the sickness is alarming; there is increasing difficulty in swallowing, there is great depression and general pain, and the temperature mounts to startling heights, as high as 105° F. or even more. The severity of the symptoms is, curiously enough, not at all in consonance with the danger of the disease; for the children practically always recover, and are very little the worse for their sickness, with the exception of a temporary weakness. This disease, which in its extrinsic character bears a resemblance to diphtheria, is in reality not at all like it. The latter is a serious disorder, has a moderate or low temperature, not so much pain, and its membrane may appear on any part of the throat or nose as well as on the tonsils; but if it does begin on the last named structures, it steadily spreads to the adjacent parts. The treatment of follicular tonsillitis is simple, and is really directed most of all to the relief of the general distress. It consists in the administration of a brisk cathartic, followed by the administration of small doses of phenacetine and

salol in frequent doses; a cleansing spray to the throat and an ice-bag to the neck will increase the patient's comfort and hasten recovery. But while the treatment of this disorder is simple enough, one should not undertake it unless the diagnosis is quite correct. No one but a medical man should assume the responsibility of making the distinction between follicular tonsillitis and diphtheria, and even he may at times be enough in doubt to need the aid of a bacteriological culture.

Colds in the head are irritations or inflammations of the mucous membranes of the nose. They may follow harsh atmospheric conditions, exposure to draughts, or attacks by certain germs. Although they are not in themselves serious, they cause considerable discomfort and open a way to more dangerous disorders. They may be mitigated or driven away by the use of cathartics, hot baths, and continuously spraying the nose with an alkaline, antiseptic solution, such as may be obtained at any drug-shop. If they are neglected, they commonly extend along the nose to the throat, and then into the large bronchi, where they start an inflammation called bronchitis. When they settle in the throat, they often affect the larynx, and produce symp-

toms of cough, hoarseness, and loss of voice. Sometimes the larynx becomes so sensitive that small irritations bring on a spasm which we call croup. This condition is temporarily relieved by the inhalation of steam, the application of heat to the neck, and the use of hot baths. The medical treatment, which is important, must be left to the attending physician.

In the treatment of bronchitis the parents must by all means free themselves from certain time-honored beliefs which should be called superstitions. Children suffering from this disease need not be swathed in blankets and pads until they resemble mummies, they need not be kept unwashed during the course of the sickness, and they will not be killed by a breath of fresh air. On the contrary they should be kept comfortably warm, but not hot; they may with advantage have a warm bath morning and night; and the sick-room should always be well ventilated. One should keep in mind that most of these cases are examples of germ infection, and that they require a vigorous excretion, a satisfactory stimulation, and a bland soothing of the cough and pain. The same requirements are needed in lobar pneumonia, which must be treated as an acute, infectious disease. Here

the chief danger is not primarily due to the cough or the interference with the breathing, but rather to the strain which is put upon the heart by the impeded circulation and the poisonous effect of the characteristic germs. Therefore the treatment is one of excretion and stimulation, the drawing off of waste products, and the maintaining of strength until the disease has subsided. The use of plasters, poultices, and pneumonia jackets serves no good end, but on the other hand may easily delay recovery, or increase the danger of the disease.

Broncho-pneumonia is a compound disease made up of a combined attack of a bronchitis and a pneumonia. This also is practically always caused by the invasion of micro-organisms; and the essential nature of the complaint is the same, in general ways, as the separate disorders. The danger, especially for infants, is an imminent one, and cannot well be overrated. The successful treatment of this condition, with its exhausting inroads upon the child's vitality, calls for the exercise of the physician's best efforts. And while the parents may not hope to do more than appreciate the gravity of the situation, their intelligent efforts

to carry out his directions may make his task easier and possibly more successful.

With any of these diseases an attack of pleurisy may be associated, or it may occur alone. This inflammation has certain points of resemblance to that of the peritoneum. Both diseases attack serous membranes, both may be simple, or characterized by the presence of serum or water, or by the additional factor of pus. In the simple, or dry, form the main requirement is the easing of pain and the maintenance of strength; in the serous form there is the additional necessity of eliminating the fluid. This serum, if moderate in amount, may be disposed of by absorption or may call for the operation of tapping or draining the chest. But the third form, which is characterized by the presence of pus, is really a large abscess, and demands an immediate incision in the chest wall, the evacuation of the pus, and the continued drainage of the cavity until all septic matter has been thoroughly removed.

There is only one other class of diseases that should be considered in this place, and that is the eruptive fevers, such as measles, scarlet fever, chicken-pox, typhoid fever. Each one is caused by a specific germ, and represents

a form of poisoning. Here again the main necessities which the treatment must meet are sustaining the patient's strength, getting rid of waste products, diminishing as much as possible the amount of work which the body has to do, and relieving the unpleasant symptoms in every possible direction. One can easily see how important it is to clear the alimentary track, to use frequent baths, to allow enough drinking water for the quenching of thirst and the flushing out of the kidneys, to make the diet as nutritious and as easily digestible as possible, and at the same time to maintain as high a degree of strength as the patient's circumstances will permit. The mucous membranes of the nose, throat, and eyes must be kept as clean as possible. For this reason they should be douched and bathed as often as circumstances demand; and as a reward the parents will have a much smaller percentage of complications in these and the neighboring parts to contend with. There is no need for the various teas that formerly were so plentifully used nor for the burdensome swathing in many flannels that is almost as hard to bear as the disease itself; the patients must be made comfortably cool, should be allowed to drink a

sufficient quantity of pure water, and should be kept in a cool, dark room, where their nervous irritability will have the least provocations to get beyond control. In all these diseases rigid isolation of the patient is most important, and the parents must willingly coöperate with the physician in checking the spread of the sickness. In many homes, in the presence of a contagious disease, the custom exists of putting the uncontaminated children in the sick room or even in the bed of the patient in order to have the sickness become general, and thus be done with it. The practice is most heartily to be condemned. It increases the amount of sickness and the risk of unfortunate results, while it gives no positive assurance that the children will be protected against future attacks. Indeed, these illnesses may occur more than once in the same child, and do so with a fair amount of frequency. In addition, such lax ideas make the whole plan of rational isolation void, they foster the belief in the necessity of sickness, and really have no rational thought to justify them. In the whole matter of sickness, the tendency of endeavor should be in the way of directness, common sense, and plain thinking. The care of the sick child

is really that of his healthy brother, somewhat developed in a special direction to meet special exigencies. In both there is need of devotion, clear-sightedness, patience, and self-denial. And in both the rewards of successful effort are doubtless more satisfactory and profitable than those in any other sort of work.

Not every one has the privilege of participating in such work; but those who have the opportunity should call themselves fortunate. To such is intrusted the making of the present and the future. The mother, if she only knew the length and breadth of her possible influence, might be the grand and beneficent figure in our society. Her body and mind are the patterns of future generations; by her thoughts and deeds she can control and modify the effects of long-past times. Her aspirations and ideals are the standards by which the world is moved. Her life, no matter how hard and common-place it may be in its outer aspects, is capable of beautiful expression. Real sordidness inheres in the characteristic spirit of one's heart and soul, rather than in the physical environment of one's daily activity. Viewed in this light the ordinary, and possibly monotonous, care of a child may take on a great significance. His

clothing, his bathing, his food, his rest, his exercise, become matters of paramount importance. To watch the blossoming of his body and mind gives an indication of munificent potentialities, a vision of never-ending development. To control these things is to have a sovereign power over events both great and small. This is the greatest career in the world; it provides boundless opportunities for the exercise of thoughtfulness, wisdom, affection, careful preparation, and discretion. Its rewards are as great as its opportunities; and the proportion between these opportunities, when they are rightly used, and these rewards is exact and never-failing.

The contemplation of such conditions is truly inspiring, for the range of the ideal mother's activity is scarcely to be limited. There is no chance of business failure, no likelihood of unappreciated or misunderstood motives, no possibility of crushing competition. On the contrary, the active creator of a wise environment, the steadfast disciple of adequate methods of child-rearing must necessarily live in an atmosphere of altruistic endeavor, of normal strength, of satisfied desires, of the consciousness of definite, human ambitions whose ends are always worthy.

The air of strenuous, long-continued devotion is a healthy one for human beings, and the development which it perforce entails lies all in the way of ideal growth. This is the foundation of civilization, the very essence of the best part of our modern culture. Those who wilfully neglect such a career not only are lacking in sense of duty, but also map out for themselves a life of pettiness, of unprofitable struggling, of unsatisfying pleasures. Here is a difference such as exists between beauty and ugliness, between right and wrong, between life and death.

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